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THE MAGAZINE FOR SAFER LIVING

SEPTEMBER 1986 VOL. 8 NO. 9
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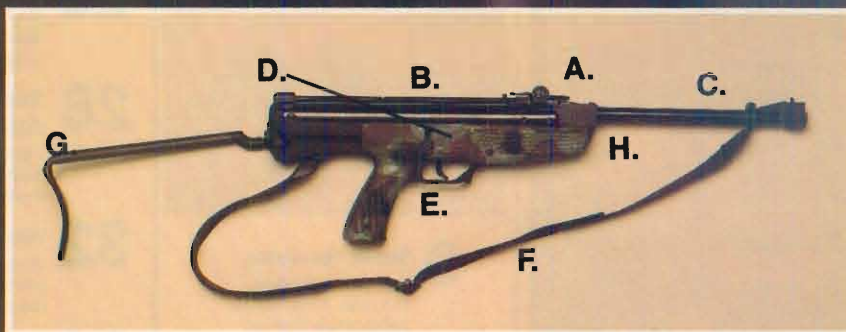
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VOLUME 8, NUMBER 9 SEPTEMBER, 1986

THE MAGAZINE FOR SAFER LIVING

COVER:

Heckler & Koch's new Model 94 semiautomatic 9mm carbines are light, sturdy and compact. The ammo is standard 9mm NATO used in many modern handguns, including H&K's revolutionary "squeeze cocker" P7 M13 pistol, here. See page 56 (Photo by Jim Benson).

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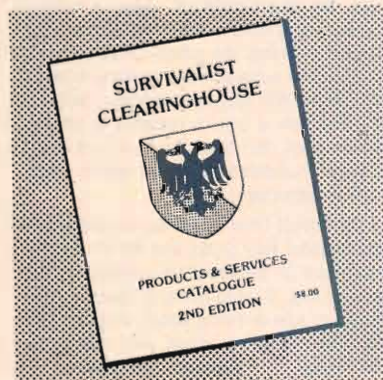


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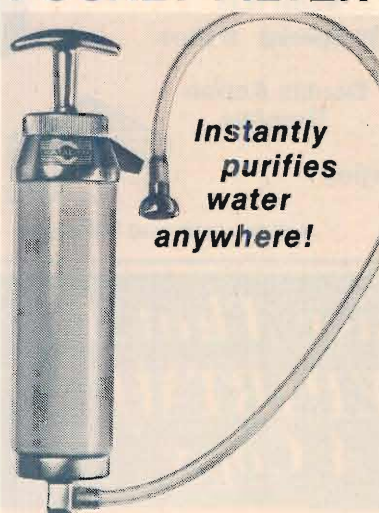
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TO THE POINT

Rape: it affects us all . . .



RAPE. It's a vicious disease that plagues our society. Rape, as was stated in an article ("The Hidden Fear of Rape") in our June 1986 issue, "is a savage act of senseless brutality . . . Rape is truly, not a crime of passion" but an act "designed to humiliate, debase, and 'conquer' the unwilling victim."

The rape problem affects us all. The legacy of rape is mistrust, hatred, fear, depression. The lives of men, women, children afflicted by rape are damaged and repairing that damage can be impossible. Many of these people will never be the same again.

Yet the rape threat has been growing in recent years. Perhaps this is due to more women coming forward to report the crime than in years past when women were more often blamed for being assaulted. Children are also encouraged more today to speak out about sexual abuse, although in many instances they are still too intimidated by the adults abusing them or too young to be able to seek help.

Many studies have been done on rapists. Most of them that I've read about say that the rapist—always a male—is motivated by anger and fear rather than sexual desire; that sex is the means by which the rapist expresses his raging hatred toward women and fear of them. Often, a woman or child

—and sometimes a male victim—will be badly injured or even killed by the rapist whose intense feelings are out of control.

Despite all these studies, our society seems unable to significantly reduce the threat of rape, let alone eliminate it. All this makes me wonder if we are on the right track in our efforts to combat the problem.

But then, I don't have answers to the whys of this enormous tragedy. I wish I did. The whole thing is very frustrating for me, as I'm sure it is for many other men who have never raped or committed other sex crimes yet who must cope with the effects of these crimes in their daily lives.

Men are, and always have been in our society, primarily responsible for romance and sex. This was supposed to have changed with the advent of the women's movement, but it hasn't—at least that's how I see it. Of course there are exceptions to this rule, this responsibility. I'm speaking generally here. But I've always felt that the responsibility for initiating relationships with women is a part of the male sex role.

I suppose this is to be expected, in light of what's happening to women. My point is that the lives of many men are damaged emotionally, by the fear and hatred generated by rape.

Now, I'm giving a male's perspective on the situation. I've never found much sympathy on this subject from women. I guess that could be expected too. Still, men are struggling with this difficulty, this weight. It's something people don't want to talk about, but it's out there. I think a considerable number of men are unhappy about the way women treat them.

What can be done about it all? I wish I knew. I wish I could recommend some bold course of action that would lead to eradication of the rape/sex abuse plague. I can't.

Among the things I think help society deal with rape are harsh—that is, lengthy—prison terms for rapists, particularly for repeat offenders. We should be protected from these individuals for as long as possible. Their rights are insignificant compared to the welfare of the rest of society.

I'd also like to see more women taking a more active role in their own defense, such as possessing and training with firearms, learning other forms of self-defense martial arts, installing security devices in their homes, developing attitudes and devising plans for avoiding/surviving sexual assault, etc.—*Jim Benson*.



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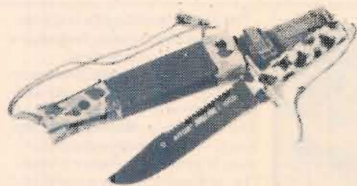
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MAIL CALL

July Cover

I have read and enjoyed *ASG* since its beginning as *Shooters Journal*. I especially appreciate your present content and editorial approach. While I realize certain literary license may be taken with the cover photos in order to sell magazines, I am concerned about unsafe practices illustrated on your July 1986 issue cover (let's ignore the fact that it looked like an ad for Survival Inc.). First, and most disturbing, is the unsafe weapon storage illustrated. Both a .22 rifle and an air rifle are shown leaning up against very unstable rests (a tent and backpack). Both were positioned so that if they fell over and discharged, a child was in the line of fire. The crossbow on the Jeep hood is obviously not "unloaded," so if it slides off, the only risk is of damaging an expensive piece of equipment (although setting it on the hood is still sloppy weapon handling). You must NEVER assume a gun is unloaded, however. Even if you assume all the children in the photo are familiar enough with firearms and responsible enough to have unrestricted access to guns lying around camp (again, sloppy, not to mention a hell of an assumption), leaning a firearm against an unstable rest is unacceptable. Two of the three vehicles were parked on a steep slope and positioned to roll into camp if their brakes failed or were released by the kids. A sealed can is shown on the burner of a camp stove—anyone imitating this method of heating food is in for a sudden and dangerous surprise (Yes, I realize the stove wasn't lit. It's still poor modeling). I have some concerns over the heater shown with the child in the tent—the need for ventilation and to guard against tipping over was not adequately shown. Again, I think *ASG* is in a class by itself, and hope I'm not nitpicking. I do think the photo was poorly thought out, and that the hazards shown should be pointed out to your readers. Your cover showed campers taking unnecessary risks to their "survival" and that's not what *ASG* is about! Thanks for a great magazine.

Name Withheld
Shawnee, Kansas

We appreciate your concern for safety and safe camping practices, but we think you missed the point of the cover photo. Be assured that both rifles were checked and rechecked to make sure they were unloaded. There wasn't even any ammunition near them. The children were constantly watched and cautioned not to handle the weapons. Of course the heater and the stove were not operational. The unopened can of food was not being heated and there was not intent to heat it. We don't know of anyone who heats food like that.

Admittedly, one might infer these and other dangers you saw in the photo. But the items in the photo were placed as they were for display purposes only. Of course we don't expect our readers to set up their own campsites like this—we wouldn't either. We had a limited amount of time in which to work after hauling all this stuff for many miles, including some very, very rugged country. We had to get everything set up and situated in such a way that each item could be reasonably clearly seen. We had to fit it all into one photo with everyone posing just right—not an easy task—and we couldn't spend a week doing it either. Again, the idea was merely to present items—for display purposes only—which you might bring along on a family outing to make life a little easier, safer and more fun. Some of these items were from our advertisers but we don't see anything wrong with displaying them. They made good props for the photo and helped to illustrate—we think—what we were trying to get across to our readers. Readers don't have to go out and buy them. All living involves risks. No matter what you do there are dangers involved. If we were that worried about presenting an absolutely safe picture of camping, we probably wouldn't have done the cover photo at all. But we think our readers are more perceptive than that and we believe most understood our intent. Nevertheless, we do appreciate your concerns. We think, though, that most of our readers are pretty good at thinking for themselves and won't misinterpret the cover photo.

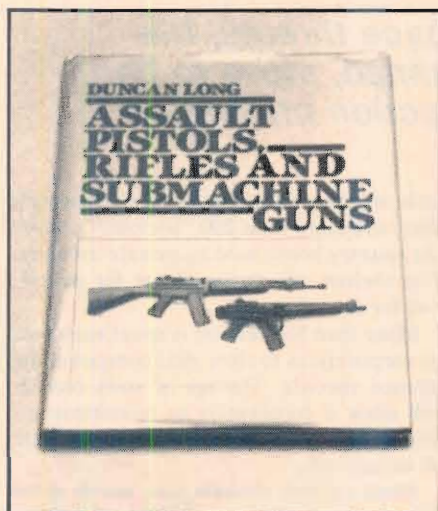
Israeli Gas Mask

I noticed in the Mail Call section of the July 1986 issue of *ASG* a letter from Martin Lindsley regarding the Israeli gas mask. He raises pertinent questions of which you have answered satisfactorily, that is, that the gas mask is effective against all known nuclear, chemical, biological agents. You also state, "Watch for an upcoming article on this mask." Can you give me any preliminary information at this time so that I can verify whether this mask is what it is claimed to be, and also, why are so many of these masks appearing on the market at such a low price at this time?

Name Withheld
New Orleans, Louisiana

Our information is that the Israelis are apparently introducing new masks which will use the same filters as these masks you speak of. We are told that a key difference between the old and new masks is that the new ones will have improved visibility for the wearers. Other than that difference, both masks are supposed to work identically. ●

BOOK REVIEWS



Assault Pistols, Rifles and Submachine Guns, by Duncan Long; Paladin Press, Dept. ASG, P.O. Box 1307, Boulder, CO 80306; (303) 443-7250; 142 pages, hardcover; \$19.95 plus \$3 postage and handling.

This book is described on its jacket as a "detailed guide to modern military, police and civilian combat weapons—both foreign and domestic." And that it is. Included is information on the AR-15/M16, AK-47/AKM/AK-74, FN LAR, H&K weapons, Mini-14, M1 Garand, M1 Carbine, SIG, FAMAS, AUG, Bushmaster, Nighthawk, TEC-9, Sterling, Thompson, MAC-10/11, Skorpion, Beretta, Galil, Daewoo, UZI, SAR-80, and many others. The author, who has written extensively on modern weapons and ammunition, explains the history of assault-type weapons with developments in both military and civilian markets. The book tells how to field strip and perform other maintenance on the guns. Additionally, Long discusses weapons of the future and trends in small arms. For example, he notes that an "A3" model of the M16 assault rifle is being developed: "The rifle will use a scope for its principle sighting system while an emergency flip-up front sight and a detachable rear sight will be available . . ." Other developments the author sees include: shorter barrels and folding or telescopic stocks for military rifles; fiber optics and laser aiming devices for pinpoint accuracy; larger-capacity magazines; the use of new lightweight materials in assault weapons; liquid recoil systems and electrostatic wind cooling systems. Which of these many full-auto and semiauto guns work well and which do not and why is another facet of the book's coverage. Listed at the back of the book are troubleshooting and ballistic appendices and a list of suppliers of firearms and accessories for different weapons. All in all a very interesting and informative book.



Survival Knife Reference Guide, by Douglas C. Berner; Bee Tree Productions, Dept. ASG, P.O. Box 9156, Asheville, NC 28815; 207 pages, 199 photos, paperback; \$14.25 postpaid.

"The survival knife," writes the author, "with the concept of a hollow handle, is a relative newcomer to the history of cutlery. Where fighting knives and utility knives have been making and changing the course of history for thousands of years, the hollow handle design has only been around for about five decades. The development of the survival knife, as differentiated from traditional fighting and utility knives, has really only emerged since the early 1960s." Selection of a survival knife, Berner says, should be a "careful, thought out process . . . one should make some deliberate decisions about the knife or knives he selects for survival purposes." With this book those decisions are much easier to make. With its abundant photos and comparison (technical) tables, this is the most comprehensive work on the subject of survival knives the editors of this magazine have ever seen. Part I of the book, *Survival Knife Characteristics*, looks at the design and function of survival knives. It focuses on component parts of these knives such as the blades, handles (hollow and others) and butts, as well as survival kit items. The author stresses the concept of a "survival knife system" and discusses the pros and cons of various design features. He also shows that commercial survival knives are not the only choices available to a prospective buyer: one can get involved in the design and creation of a custom survival knife to suit one's particular needs. Part II, *Survival Knife Reference Guide*, contains detailed coverage of more than 125 survival knives by custom knifemakers and commercial cutlery firms. Included are descriptions, photos and reference tables providing quick access to information on these knives.

(Continued on page 30)

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SURVIVAL LINE

Geese warning system, space threats, file survival, machine guns banned, move to ban ballistic knives, child abduction prevention . . .

PERIMETER warning systems can range from pebbles in cans suspended from trip wires, to sophisticated heat, sound, and motion detectors.

Survivalists might wish to take note of a new perimeter warning device now being used at some U.S. Army bases in West Germany—geese. The Army has purchased 900 geese, (total cost \$25,000), which will be used as a "natural alarm system" at a number of Army installations. Army spokesman note that geese are sharp eyed, have incredibly good hearing, and when disturbed are very loud. Further, when compared with the cost of a single guard dog, (up to \$50,000 when training, handler's salary, and other costs are added together), the geese are almost cost free.

Space Threat—At a recent meeting of the American Geophysical Union scientists warned of the calamitous effects that could be expected should even a medium-sized meteorite or asteroid hit the earth.

Such incidents are rare but not unknown. In 1908 miles of forests were leveled in Siberia when a meteorite exploded in the atmosphere. The explosion had an estimated strength equivalent to a 12-megaton nuclear blast. Scientists note that the probabilities of such an impact are approximately once every 100 years.

Speakers at the meeting noted that while industrialized countries could probably determine that such an explosion was non-nuclear in origin, the possibility of it occurring over a volatile area such as the Mideast might open the way for a nuclear retaliatory strike by a country assuming it had been attacked with nuclear weapons.

A very large impact could also produce effects similar to those predicted for the so-called "nuclear winter." One of the predicted effects is a disruption of agricultural production caused by the dust cloud from the explosion and its effect of reducing sunlight to crops.

To prepare for such an event, Dr. Joseph Smith of the University of Chicago, advocated an "International Decade on Stockpiling for Survival." The goal would be for the world community to explore and implement programs for the long-term storage of grains and other vital commodities.

File Survival—While the Federal government has all but abandoned plans to shelter the U.S. population in the event of a crisis, private industry has gone ahead

with its own sheltering plans. Currently there are more than 200 "shelters" around the country being used by private industry. The shelters are designed not for people, but for records.

More than \$50 million is spent each year by corporations to store vital computer and printed records. Storage of such records will allow a corporation to reconstruct its financial and operational base in the event of catastrophe.

Most of the shelters are much more secure than those provided the U.S. populace during the 1950s. One of the newest is the Dataport in New York City. Carved out of solid granite, Dataport is located 100 feet below the World Trade Center. Its two-and-a-half-acre floor space is enclosed by 30-foot-thick walls, and patrolled by armed guards 24 hours per day. The entire area is climate controlled to prevent any damage to the millions of records in storage. So many corporations are interested in preserving vital records that Dataport has begun construction of a second records shelter to meet the demand.

No More Machine Guns—The passage of the Firearm Owners Protection Act recently has eased some of the more non-sensical restrictions imposed by the 1968 Gun Control Act.

Gun owners will now be able to transport a pistol across state lines, as long as ownership of the weapon by the individual is legal in the state of origin and the state of destination. Interstate sales of rifles and shotguns will now be legal.

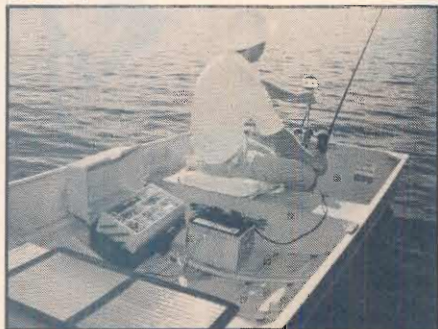
For prospective machine gun owners however, the new law is not a step forward. Under the law sales of machine guns made after May 19th will be banned. The new law has caused prices of machine guns made prior to May 19th to double and in some cases triple as supplies dry up.

Notes—A move is underway in state legislatures and the federal government to ban sales of the so called "ballistic knife." The knife which can fire its blade up to 30 feet, has been called by critics "the latest in cop-killer technology."

New York State has put out a new booklet for parents on techniques they can use to help protect their children from abduction. The booklet, *How To Protect Your Child From Abduction By Strangers*, is free. Call (800) FIND-KID to request your copy. ●

NEW PRODUCTS

Sun Pal



The Sovonics Personal Power Packs, Sun Pal, are lightweight, easy-to-use solar electric generators. The Sovonics Personal Power Packs come in three convenient sizes which turn sunlight into either 6 or 12 volt direct current electricity. The Sun Pal is ideally suited to charging batteries or powering a variety of consumer products, including audio and video products, toys, tools, and battery powered appliances. The Sun Pal units are designed for portability with the largest version, the Model 110, weighing only 3½ pounds. The rugged, durable Model 105 can be easily carried with the optional shoulder strap and can power a variety of toys, portable tools, appliances, audio and video equipment. The Sun Pal Model 102 is only 9" x 7" x ½" and weighs only one pound, yet it recharges batteries and operates most small 6 volt radios and cassette players. A line of accessories complement and extend the use of the Sun Pal. The list prices are: Sun Pal Model 102—\$70; Model 105—\$105; Model 110—\$210. Sun Pal units are designed for portability and attractiveness without detracting from their ruggedness and light weight which result from Sovonics proprietary production process for flexible amorphous solar cells. For more information contact Sovonics Solar Systems, Dept. ASG, Cochran Road, P.O. Box 39608, Solon, OH 44139; (216) 349-2827.

Superdome Pellet



The new Superdome pellet is the latest

addition to the RWS family. It is a bulldog (roundheaded) pellet which has the same quality, accuracy and technological advance as all RWS pellets and is ideal for target practice or general use. It is available in calibers .177 and .22 in tins of 500 each. It is available at sporting goods stores and other retail outlets where RWS products are sold.

Stun Gun Power Booster



Defense Research Associates announces its new add-on *Power Top* performance booster bar for the NOVA XR-5000 and other Stun Guns. The Power Top increases the delivered "knockdown" power by as much as 50-100 percent, without creating any additional battery drain. The Power Top can be added to all existing NOVA XR-5000 Stun Guns, and is available for most other brands and models. Installation takes about five minutes, and does not require any special skills or tools. The booster increases knockdown power by preventing current from "short-circuiting" through the test probes during use. Of the four probes at the business end of a Stun Gun, only the forward-pointing ones deliver the knockdown shock. The other two are "test probes" which *do not* have any knockdown effect. During use of an unmodified Stun Gun, the test probes usually contact the subject, and electrical output is wasted by short-circuiting through the test probes, rather than flowing into the shocking probes. The Power Top bar prevents the test probes from touching the target, so *all* of the electrical power goes into the shocking probes, and none is wasted. In marginal situations such as powerful or determined attackers, and heavy clothing, the booster bar may make the difference between a Stun Gun working . . . or failing. In tests on martial arts experts who were expert at pain tolerance and mind control, an unmodified Nova

XR-5000 sometimes failed to down the subject. However, the hopped-up unit with the Power Top was consistently effective. Also, because all the current is turned into the knockdown "zap," a much shorter zap will usually down and control the subject . . . and battery charges can be expected to last longer. The Power Top performance booster is \$15.00 Postpaid from: Defense Research Associates, Dept. ASG, Box 5280, Santa Cruz, CA 95063-5280. The NOVA XR-5000 version can be ordered directly. For other brands, mail Defense Research Associates a business-size, self-addressed envelope with two stamps, for a complete information packet on the boosters, Stun Guns, and other products.

Liberty Knives



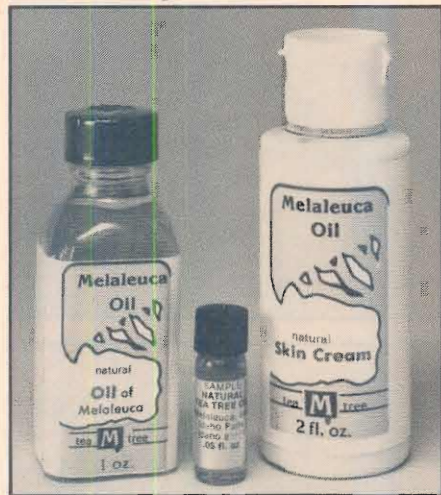
Commemorating the Statue of Liberty Centennial, Buck offers two knives featuring a handsome Miss Liberty medallion made from the Statue of Liberty/Ellis Island National Monument. Model 500L (left) has handles made of wood from doors of the historic facility and is 4¼ inches closed. There is a gold-filled etching of the Statue of Liberty on the blade. Model 826, 2¾ inches closed, has a gold-filled etching on the blade and a gold-plated reproduction of "The Lady" sealed in epoxy polyurethane on the handle. For more information contact Buck Knives, Inc., Dept. LK, P.O. Box 1267, El Cajon, CA 92022.

Banana Mags



Ram-Line has designed a unique high capacity magazine to fit the Ruger 10/22 and 77/22 rifles. Compactness is a major feature of this new design. The new 50 rounder is the same size as existing 25-round mags. The 30-round version is about 1/2 the size of previous models. Reliability of feeding was verified by shooting over 50,000 rounds of various brands of .22 ammo through the variety of different test guns in climatic conditions ranging from extreme cold to simulated desert temperatures. Levers, windows and wind-ups are eliminated by the proven, patent pending, split/follower design which allows side by side bullet stacking for double capacity. Ease of loading is assured with the banana design which performs its feeding functions without the necessity of belts used in drum mags. Mags are made of high impact aerospace polymer available in a semi-transparent or black color. Suggested prices are: 50-round, \$38.50; 30-round black, \$17.95; 30-round clear, \$19.95. For further information write: RAM-LINE, Inc., Dept. ASG, 406 Violet Street, Golden, CO 80401.

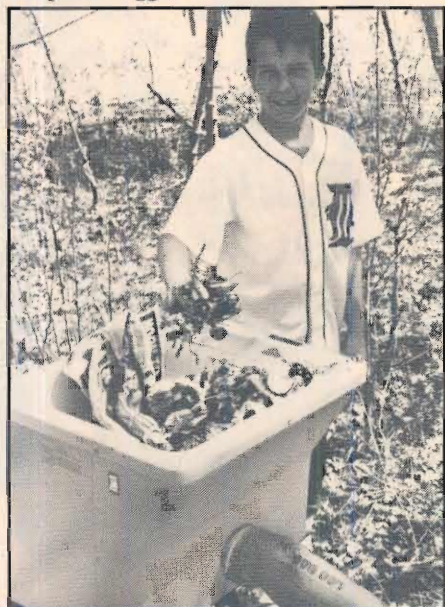
Natural Antiseptic



Oil of Melaleuca, known as "Tea Tree Oil," is a new germicide fungicide that is being imported into the U.S. for the first time on a large scale. Distilled from the leaves of a melaleuca tree in Australia, this 100 percent pure, totally natural oil prevents infection in cuts, wounds, insect bites, and helps with minor burns and scalds. And Tea Tree Oil is very effective in controlling fungus such as athlete's foot and jungle rot. Used by Australians since the early 1930s, Tea Tree Oil was provided to the Australian troops during the Second World War. Now Americans are finding this to be a helpful addition to the medicine chest and to their first-aid kits. The oil is non-toxic, non-caustic, and virtually non-irritating to almost all skin

types. The Oil of Melaleuca is used as a base for a full line of health and skin care products. Additional information is available by writing to: Tea Tree Oil, Inc., Dept. ASG, P.O. Box 18508, Spokane, WA 99208.

Fireplace Logger



The new at-home-use log maker has recently been introduced by American Cytech Corporation. The new "Fireplace Logger" converts trash into non-toxic, high-BTU logs for burning in your fireplace, stove, furnace, barbecue or open fire. Uniquely and compactly designed, the Fireplace Logger converts leaves, newspapers, shopping bags, cardboard, magazines or any non-toxic burnable material into an attractively packaged long burning fireplace log at a cost of only 8¢ per log or less (the 8¢ is the cost of the fireplace log bag and special fuel and flue cleaning scented additive). The Fireplace Logger is lightweight (40 pounds) and is both safe and so simple to operate that a child can operate the unit. Up to 30 logs per hour can be mulched, packaged and sealed for use: the average log will burn up to 1 hour at approximately 8,000 BTUs. It is portable, operates on 110-volt power, is shipped complete including a supply of bags and fuel additive and contains unique features including: no jamming mechanism, stone and rock automatic rejection feature, self-cleaning, quiet operation, maintenance free with standard parts attainable from local hardware stores, totally rustproof, reversible motor and designed for maximum safety. The finished log may vary with material used but the average size is 4-inch diameter, 14 inches long. The Fireplace Logger's uses are unlimited; an average weekly supply of

your local newspaper can be converted to 25 to 40 fireplace logs, hundreds of logs can be created from the leaves and twigs in a small lawn, cardboard boxes that normally are trashed become an excellent energy source and all burnable materials can be combined at one time (paper, leaves, twigs, cardboard, etc. can be placed in the machine together to go into the same log). Priced under \$300 the Fireplace Logger is fully guaranteed by the manufacturer. For more information, contact: American Cytech Corporation, Dept. ASG, 5700 West Broadway, Crystal, MN 55428; (612) 533-8690 or (612) 924-3312.

Reloading Video



The National Reloading Manufacturers Association has just completed production on a half-hour video tape on rifle, handgun and shotshell reloading. Available to shooters, dealers, gun clubs, hunter safety instructors and others in VHS format, the new video cassette is a step-by-step demonstration of all phases of reloading. Tight closeup footage of each operation from case cleaning to bullet seating lets the viewer visualize the entire reloading process. "We hope this video will help take some of the mystery out of reloading," said NRMA Executive Secretary Bill Chevelier. "We want shooters to understand the whole reloading process and be aware of the important safety considerations, but at the same time not be afraid of getting started in reloading." Tools, components and accessories manufactured by the various NRMA members were used in the production so viewers can understand the operation of these products. The presentation includes an explanation of the basic firing process of modern cartridges and shotshells, and includes detailed nomenclature of shells and bullets. Every recommended step in the reloading process is detailed in the video, although shooters must refer to manufacturers' manuals for actual loading data. Safety is emphasized strongly in the video, and information on plans for building a reloading bench is included. The video tape cassette on VHS format may be ordered by sending \$29.75 to NRMA Video, Dept. ASG, 4905 S.W. Griffith Dr., Beaverton, OR 97005. ●

From Brazil:

Air Shot Survival Carbine

Portability and reliable performance in .177 caliber . . .

Staff Evaluation



RIGHT — Testers found the Air Shot Survival Carbine accurate and reliable.

QUANTITY materials and construction, portability and ease of storing, accuracy, and dependability are some of the distinguishing characteristics of the Air Shot Survival Carbine.

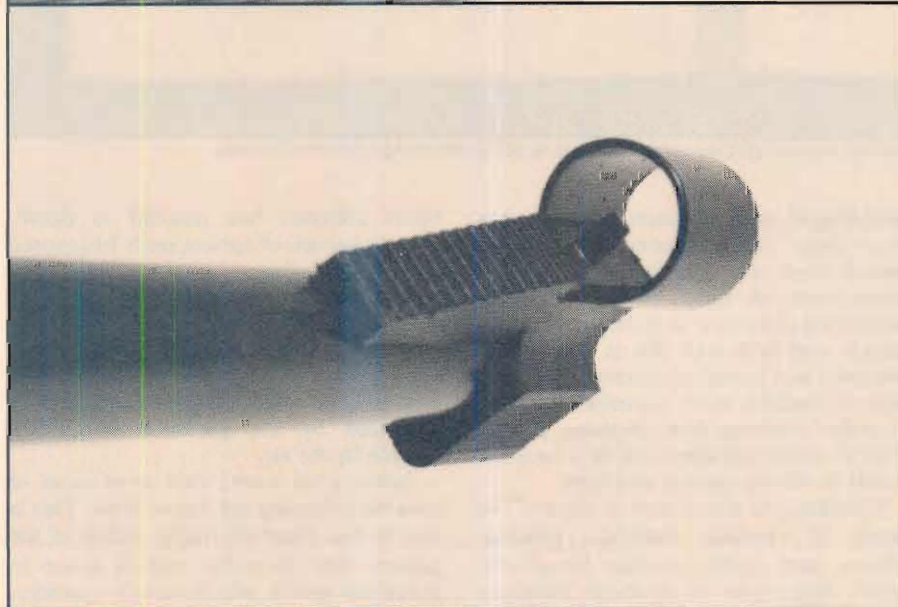
Firing .177-caliber (4.5mm) flatnose pellets with a muzzle velocity of 550 feet per second, the Air Shot carbine features a micro-adjustable rear sight for windage and elevation deviation, a 25-shot pellet tube, all steel rifled barrel, a safety that engages each time the rifle is cocked, single-stroke cocking, camouflaged hard plastic forearm and pistol grip, retractable butt stock and military sling.

Total length of the weapon is 32 inches, 22 inches with stock folded. There are guides for mounting a telescopic sight if





Single-stroke cocking adds to ease of operation.



The Air Shot features an excellent rear sight micro-adjustable for windage and elevation. The front sight is a hooded post.

desired. Weight is 5 pounds and 10 ounces. A one-year warranty is included with purchase.

With easy single-stroke cocking and the 25-shot magazine, the Air Shot Survival Carbine is capable of fairly rapid repeat firing. Its excellent sights make it quite accurate.

The staff of *American Survival Guide* tested the Air Shot and found it worked very well, with no malfunctions in more than 100 shots fired.

Fired without a rest from 15 and 20 yards, the carbine provided groups averaging about 6 inches for the longer range and about 4 inches for the 15-yard range. There was some wind deflection encountered during testing. The hooded front post sight can be aligned swiftly with the rear notch sight for follow-up shooting, but the testers felt that painting that front post a bright orange or red would enhance this action, since the rear notch is narrow. The OD military sling helps steady the rifle when aiming as well as making it convenient to carry.

The metal butt stock folds by depressing a lever where the stock attaches to the receiver.

The safety lever, which is automatically engaged each time the barrel is broken down, is located on both sides of the weapon and is disengaged with a flick of the thumb or forefinger of either hand.

The magazine is mounted on top of the receiver. It is removed for loading by pushing it backwards and then sideways. The pellet pushing lever is drawn rearward and engaged in a slot to keep it depressed. Pellets (flatnose only) are then placed one by one in the tube with their heads pointing upward. The magazine tube is then replaced and the magazine spring lever is gently released.

The millimetric rear sight can be adjusted in steps of 1mm deviation when shooting at a target 10 meters away.

Like a regular firearm, the Air Shot Survival Carbine must be cleaned and oiled periodically. The manufacturer, GAMO Armas E Municoes Ltda. of Brazil, recommends cleaning the barrel with a cleaning rod every 500 shots. The barrel locking plunger should be oiled after cleaning the gun.

This weapon weighs about as much as an M16/AR-15. While some users might find it a bit heavy compared with other air rifles, the weight aids in reducing the slight recoil and therefore promotes better accuracy. Testers said they would not mind toting this air rifle around in the boonies for a day of small game hunting. The testers found the rifle to be accurate and reliable and handily portable for hunting or pest control.

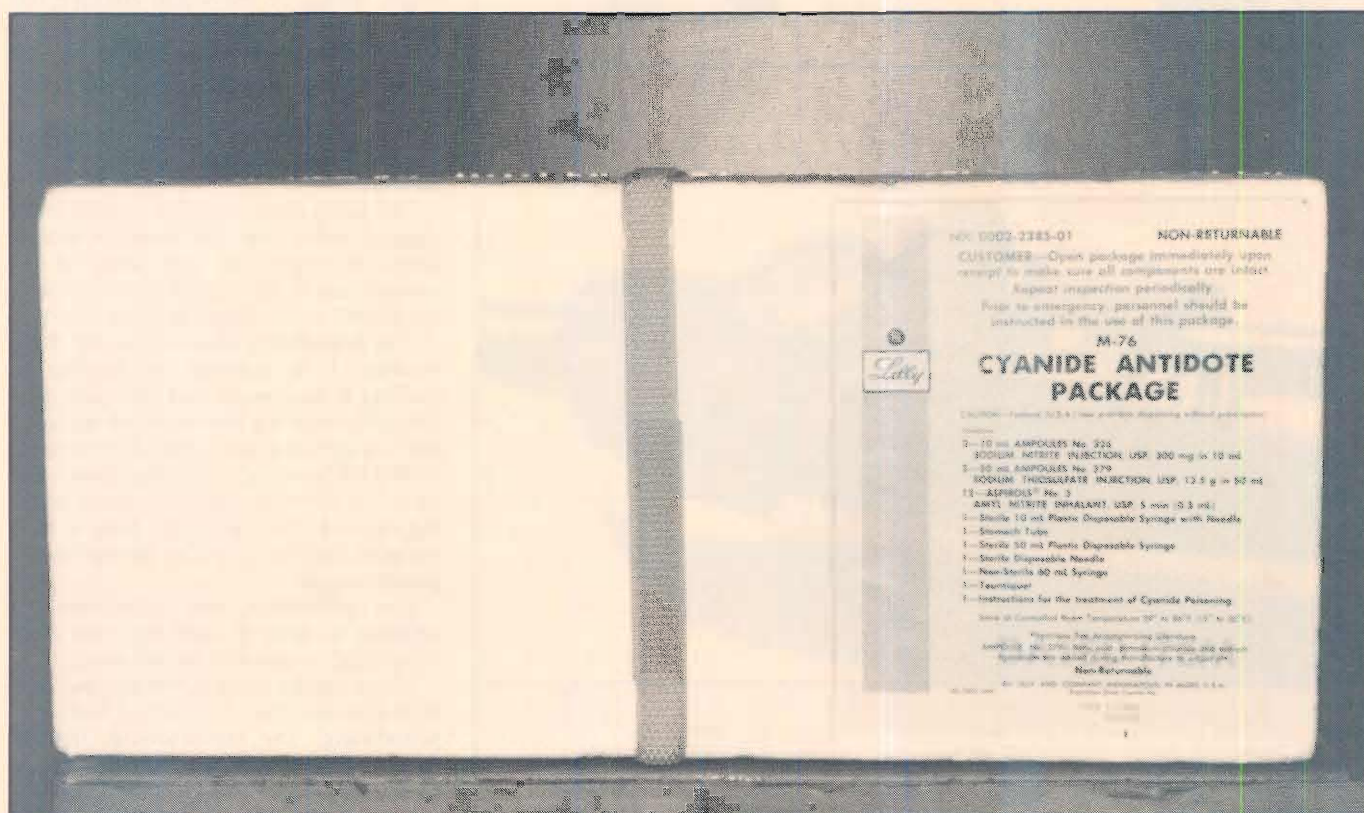
The Air Shot Survival Carbine can be purchased for \$59.95 including freight and handling charges from Air Shot Corporation, Dept. ASG, P.O. Box 430043, South Miami, FL 33243; for fast credit card ordering call (800) 222-SHOT. ●

Rapidly Acting:

Death In Minutes: Cyanide Poisoning

Recent cases of lacing over-the-counter medicine with cyanide have put the spotlight on poisons available to malefactors. What are the possibilities of expanded usage? . . .

By Max Klinghoffer, M.D.



Eli Lilly Company distributes this kit for treating cyanide poisoning (Courtesy of UCI Medical Center Poison Control Center).

(This article is reprinted with permission from the Journal of Civil Defense—The editors.)

SODIUM CYANIDE, Potassium cyanide, and Hydrogen cyanide are among the most rapidly acting poisons known. Hydrogen cyanide is also known as Hydrocyanic acid, or Prussic acid, and is the gas used in lethal chambers for executions. There are other cyanides, but the three named are the most commonly used.

Cyanides have many uses, including: the

polishing of metals (especially silver); electroplating; the extraction of precious metals from ores and from the chemical compounds of those metals; the case hardening of metals; in photographic processes; and (although this is now almost obsolete) as a fumigant for ships and warehouses. Recently there has been interest in cyanides resulting from burning plastic. This is under consideration as a cause of death in vehicle crashes and fires.

Cyanides are also found in nature. The seeds of cherries, apricots, peaches, plums, and apples contain Amygdalin, which hydrolyzes to produce Hydrogen cyanide. Oil of bitter almonds produces Hydrogen cyanide, and a single handful of

bitter almonds has resulted in death. Twenty kernels of apricot seeds has caused cyanide poisoning.

The odor of cyanides is typical and has been described as "the odor of bitter almonds." Even the Sodium and Potassium salts of cyanide give off this odor on contact with moist air. This reaction is enhanced by the presence of Carbon dioxide in the air.

Pathologists report that most cases of cyanide poisoning are found dead. This is due to the extremely rapid action of the poison. The mortality rate is lower in industrial plants which handle cyanides, since the victim is seen much more quickly, and treated at once.

Cyanides usually produce unconsciousness within seconds, and death within a few minutes. One grain of Hydrocyanic acid is usually lethal, as is 2.4 grains of Potassium cyanide. However, cases have been reported in which recovery followed after much larger doses. The inhalation of Hydrogen cyanide has resulted in almost instantaneous loss of consciousness, and death within two or three minutes. In the case of ingested cyanides, the interval of time between ingestion and death depends somewhat upon the contents of the stomach. If there is considerable food in the stomach the onset of symptoms is delayed. If the stomach is empty and/or the gastric acidity high, symptoms begin much sooner. This is probably due to the fact that the cyanide reacts with the Hydrochloric acid of the stomach to produce the rapidly lethal Hydrogen cyanide. This chemical reaction also accounts for the fact that the odor of bitter almonds is present in almost all cases of ingested cyanides.

Cyanides act as poisons by inhibiting numerous enzyme reactions. Most important of these is the reaction with cytochrome oxidase, which, in turn, prevents the utilization of Oxygen by the cells. Thus, cyanide poisoning represents asphyxia: not within the pulmonary system, but at the cellular level. Since the cells are unable to utilize the Oxygen carried by the blood, the blood remains red or pink in color. This cyanide poisoning may be confused with Carbon monoxide poisoning. Cyanosis (turning blue) is not common in cyanide poisoning.

In the case of ingested cyanides, there is a feeling of constriction in the throat, with salivation, nausea, and perhaps vomiting. There is confusion, headache, and anxiety. Headache is common. Respiration is at first rapid and deep, as a response to the cellular demand for Oxygen.

Then the respirations become slow and irregular. Palpitations are common. The victim may then collapse, and convulsions may follow. There is often foam about the mouth, frequently bloodstained. The hands are clenched, and there may be opisthotonos (a type of convulsion with arching of the body).

Cyanide poisoning usually occurs by ingestion or inhalation, although cyanides may also be absorbed through the skin, and fatal poisoning may occur by that route. It should be noted that pathologists have been poisoned while performing autopsies on the bodies of victims of cyanide poisoning.

The treatment of cyanide poisoning must be heroic, because of the rapidity of action of the poison. Approximately 80 percent of the victims die (although this figure is decreased in industrial plants where elaborate emergency measures are quickly available).

There has been little change in the mode of treatment over the years. The mainstays of treatment are: Amyl nitrite inhalations;



ABOVE AND RIGHT — Some examples of tamper-resistant packaging for medicines (Courtesy of The Proprietary Association).



intravenous Sodium nitrite; and intravenous Sodium thiosulfate. Amyl nitrite is available in "Perles" or "Aspirols" each containing five minims of the volatile substance. Immediately following treatment with Amyl nitrite, intravenous Sodium nitrite should be administered. The usual dose is 300 milligrams. It is available in 10 cc ampoules, and should be injected at the rate of 2.5 to 5 cc per minute. Amyl nitrite may be administered simultaneously, using several perles in the first half hour. During administration of these drugs, the blood pressure must be constantly monitored. If the pressure drops below 80 mm. systolic, the medication should be temporarily halted. Immediately following the Sodium nitrite, the patient should be given 12.5 grams of Sodium thiosulfate intravenously. This is available in 50 cc ampoules, and it should be administered —also at the rate of 2.5 to 5 cc per minute. If necessary, the Sodium nitrite and the Sodium thiosulfate may be repeated in an hour, but at half the original dosage. The use of these nitrites involves the risk of the production of excessive Methemoglobin, and medical judgment is necessary in determining dosage.

Any contaminated clothing must be removed, and any residual chemical washed from the skin. This requires special precautions on the part of all medical personnel, because of the danger of absorption through the skin.

If the poison has been ingested, the stomach should be evacuated as early as possible. There is some question concerning the use of emetics, since cyanides are corrosive. Gastric lavage is probably safer. Yet the urgency of treatment is such that the emergency personnel may have to make a rapid choice concerning the means of evacuating the stomach. Certainly the danger of emetics increases if the victim is

not fully conscious. Caution must be observed in disposing of the vomitus, again because of danger of skin absorption. It may be necessary to save some portion of the vomitus in sealed containers, for later analysis and for forensic purpose.

The action of the nitrites used as antidotes is based upon the formation of methemoglobin, which binds the cyanide ions. Sodium thiosulfate increases the activity of the rhodanese enzyme, and thus converts cyanide to a less toxic thiocyanate. Methylene blue may be of use if there is overproduction of methemoglobin.

Supportive measures are of course indicated. But mouth to mouth respiration is contraindicated. The treatment of cyanide poisoning requires teamwork, especially since time is so important. The need for a trained team is apparent when the steps in treatment are required: the removal of contaminated clothing, and the removal of any residual chemical from the body; the administration of Amyl nitrite, while giving respiratory support; the administration of intravenous Sodium nitrite and Sodium thiosulfate; emptying the stomach; and supportive therapy. It is said if the victim survives the first half hour, the prognosis is good.

Chronic cyanide poisoning does occur, usually where cyanides are used in industry, while cyanide is a fast acting poison, the body does have the ability to detoxify the chemical rather rapidly. In some instances, the rate of detoxification is equal to, or almost equal to, the rate of intoxication. The mortality rate in such cases is much lower than in acute poisoning. ●

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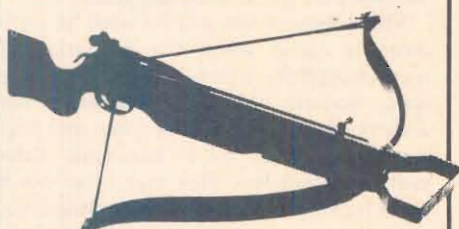
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ASG 0901

Pink Hill, North Carolina, established survival group seeks contact with other survival groups or individuals in North Carolina interested in survival. Serious inquiries only, no racists or nazis.

ASG 0902

Port Gibson, Mississippi, would like to exchange ideas, information, and maybe start a survival group with other women in Mississippi or east central Louisiana. Racists, culties, druggies need not respond.

ASG 0903

Washington, D.C./Northern Virginia, would like to make contact with computer bulletin boards discussing serious, practical survival topics. Send phone numbers, protocols.

ASG 0904

Dayton, Ohio, ex-Green Beret survivor with large earth sheltered home in the woods invites other folks with similar interests to join the fun.

ASG 0905

Sellersville, Pennsylvania, ex-Special Forces L.R.P. with 3 tours of Vietnam wishes to start or join a group in the Pennsylvania area. Have training in weapons, explosives, L.R.P. survival, communication and wish to communicate with survivalists in surrounding states.

ASG 0906

Kannapolis, North Carolina, 16-year old learning survivalist trying to find men and women that enjoy the outdoors. Also people that are interested in guns, knives, helicopters, snipers, and airplanes.

ASG 0907

Thompson, Georgia, would like to contact other survivalists to form a group in the Augusta, Georgia, area.

ASG 0908

North Central Oklahoma, twin survival teams looking for correspondence with other teams. Same area and other areas. Exchange ideas. Lone survivalists welcome. Option to form network of survival teams. Write "Rene-gade Base." Non-subversives only.

ASG 0909

Culpeper, Virginia, survivalist family wants contact with other survivalist family in the area.

ASG 0910

Topeka, Kansas, would like to hear from self sufficient types. Answer all. No warriors or fanatics, please.

Address response letters as follows:

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Your letters will be forwarded to persons listed within two days of receipt. *American Survival Guide* accepts no responsibility for loss or delay of inquiry letters. Contact letters that do not carry the appropriate code number will be discarded.

Those who wish to be added to the directory listing, please send names and addresses to *American Survival Guide*, 2145 West La Palma Avenue, Anaheim, CA 92801. The listing is free. ●

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ORIGINALLY INTENDED for use by defense personnel in a nuclear attack or disaster, the Victoreen CD V-710 Model 5 portable radiation survey meter can detect gamma radiation dose rates up to 50 roentgens per hour.

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There are three simple basic steps for proper operation of the CD V-710 Model 5. These are zero adjust, circuit check, and range selection and reading.

For zero adjust, after batteries are installed, turn the meter on by turning the range switch from the "OFF" position to the "ZERO" position. Wait about one minute to allow the electrometer tube to warm up, then orient the "ZERO ADJUST" control until the meter reads zero. Without proper zeroing, the meter will not correctly read radiation levels.

To make a circuit check turn the range switch counter clockwise from the "ZERO" position through the "OFF" position to the "CIRCUIT CHECK" position. This position is spring loaded to return to "OFF." The range switch must be held at the "CIRCUIT CHECK" position briefly until the meter reads in the red outlined section on the right side of the meter scale labeled "CKT. CHECK." If it does not, either the batteries are low or there is a problem in the circuit. The instrument must be zeroed before making a circuit check.

For range selection and reading, turn the range switch to the "X100," "X10" or "X1" range as necessary to obtain an up-scale reading on the meter. The meter reading observed must be multiplied by the factor indicated by the position of the range switch to obtain the correct radiation dose rate in roentgens per hour (r/hr). Readings should not be taken with the meter pointer indicating in the lower 10 percent of the scale. Turn to the next most sensitive range until the pointer shows a reading in the upper 90 percent of the scale.

The CD V-710 portable radiation survey meter is \$69.99 (including shipping charges) and can be purchased from Medical Instruments Ltd., Dept. ASG, 501 High Street, Salem, VA 24153. Medical Instruments, Ltd. provides a money-back guarantee if the purchaser is not satisfied with the meter. ●

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Combat Versus Sport:

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'Unless you've been trained in instinctive point firing, you'll jerk the trigger and fire wildly, if at all!' . . .

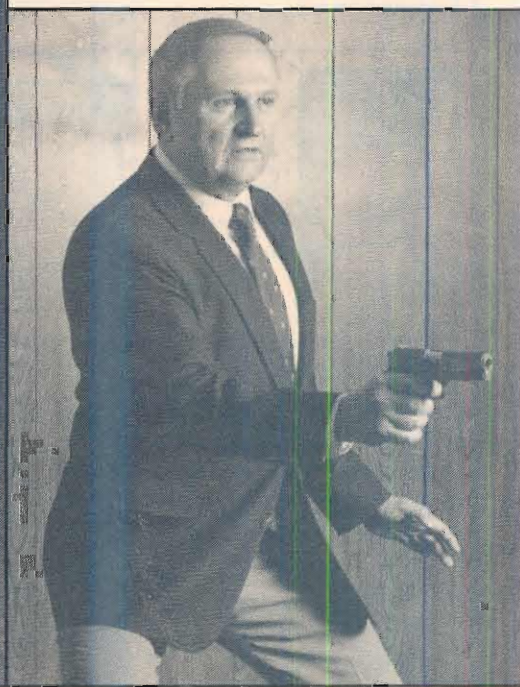
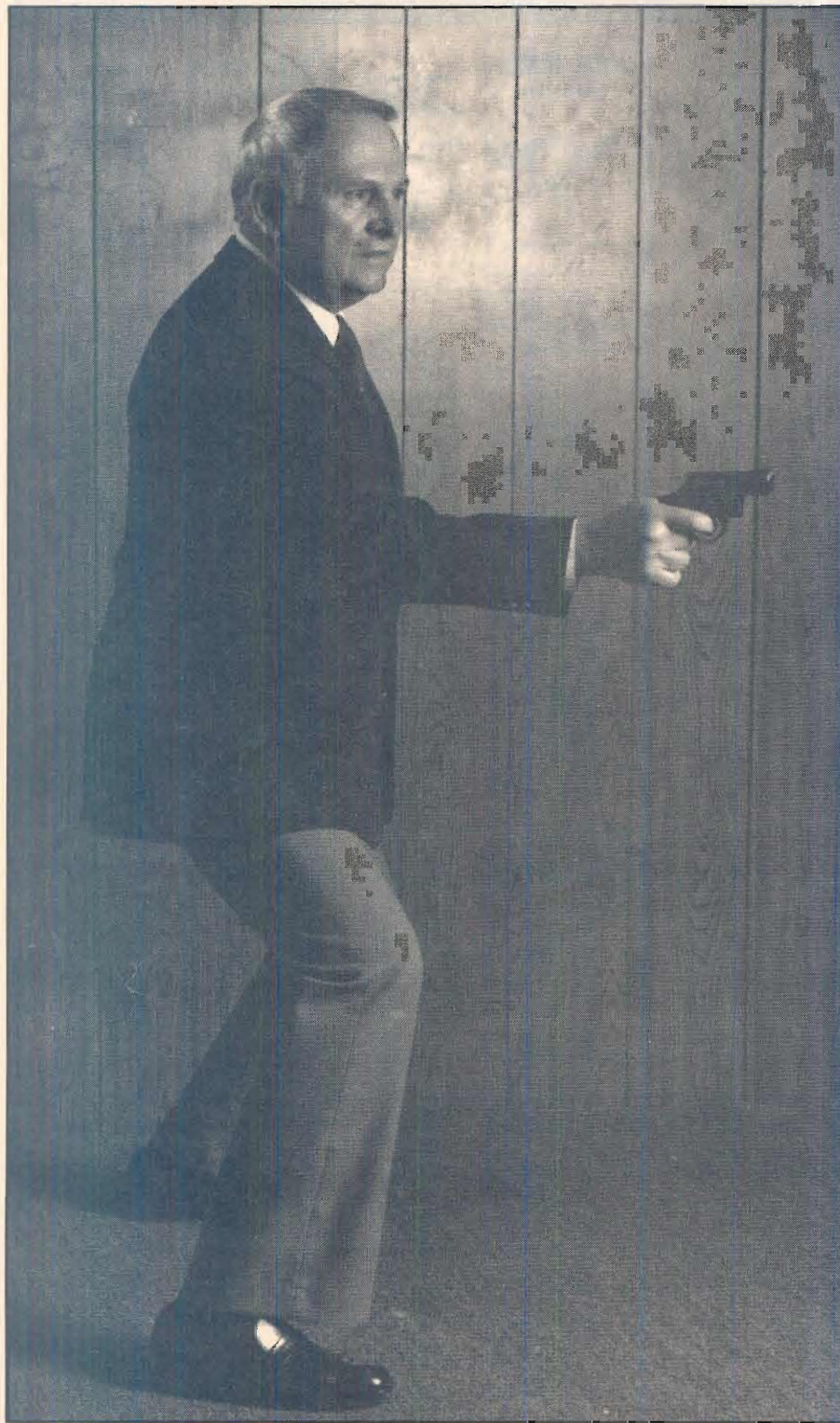
By John McSweeney

PHOTOS BY PETER LeGRANDE

(At the end of this article is a review of three video tapes on the armed and unarmed self-defense methods taught by the author—The editors.)

THE FIRST TIME I fired a handgun was in 1945. I was in the U.S. Navy undergoing gunnery training on the Atlantic Coast near Newport, R.I. In the off-hand position I aligned the sights of a Colt .45 semiautomatic and squeezed the trigger at a bull's-eye 25 yards away. I never quite got the hang of it, nor did my classmates. We did much better with 20mm automatic cannon fire because we quickly caught on to the trick of "aiming" with our tracers.

Later, during the Korean War, I was a security officer with the U.S. Air Force and traveled all over the Far East including much of South Korea doing a variety of security jobs. My weapons were a Thompson submachine gun and a Colt .45. I turned the Thompson on its side to minimize climb and fired in short bursts. Aiming was by instinctive pointing. Only a novice would use sights for automatic fire because after the first round the muzzle



The author demonstrates instinctive point-shooting stances which he teaches for close-quarters combat.

climbs as does the burst. I was trained to use the same method of instinctive pointing with the Colt .45 and after a while could hit anything within seven yards. I couldn't hit the head of a pin of course, but I could hit a man.

After the war I spent seven years as an infantry captain in the active U.S. Army Reserve. I spent 4 months on active duty and the balance as a "weekend warrior." I joined the Army Reserve for the sole purpose of learning infantry weapons and tactics. During the seven years I fired M1 Garands, BARs, M1 & M2 Carbines, Thompsons and grease guns, recoilless rifles, bazookas, mortars, .30 cal. light and heavy machine guns and of course, the Colt .45 semiauto.

I have had an abiding interest in weapons from the age of 17 and today, some 41 years later, I teach handgun combat shooting along with combat or street-fighting karate at my school "Self-Defense Unlimited" in Elmhurst, Illinois.

Why do I tell you all this? Because today's handgun experts teach *aiming with sights* as a valid method of combat shooting. I say they're wrong and my experience with combat weapons lends weight to my argument.

Who are today's handgun experts? Almost all of them are champion sport shooters, either IPSC or PPC. They train people to place tight groups inside the A-Ring of a Milpark Silhouette, in seconds from the draw, at 25 meters. This is quite a feat and requires an individual to devote an enormous amount of time and determination to gain such a skill. That they have to use their sights goes without saying. No method of instinctive pointing could achieve such accuracy.

But are the skills required to become an expert sport shooter transferable to combat shooting? I say not only are they *not* transferable but that each requires *separate* skills!

The failure to realize this is the reason for the poor performance of police in gunfights, hitting with only one out of four shots. They are being trained in methods which perform well in sport shooting but which have no bearing whatsoever to actual gunfighting.

To begin with, what has 25 meters range to do with gunfights? Gunfights take place at *point-blank* and near point-blank ranges. *Half* of them are *within 5 feet*, 87 percent are within 5 yards, 95 percent within 7 yards and almost 100 percent within 10 yards. (This is FBI data, collected from police agencies throughout the country).

Seventy percent take place in darkness. How do you aim with sights in the dark? And most important, how do you force yourself to look at the front post of your sights when someone is shooting at you at point-blank range? What you'll do, whether you want to or not, is look at the threat, the person firing at you.

The reason is due to the "tachy-psyche

effect," well known to psychologists. This means that when an individual comes under the threat of instant death from an immediate source some complex and strange psycho-physiological events take place.

1) **TIME/SPACE DISTORTION SETS IN.** Things in the immediate environment seem closer than they are and everything seems to move in slow motion.

2) **AUDITORY EXCLUSION TAKES EFFECT.** This blocks out all sounds except those directly related to the threat. Even shouted commands can't be heard.

3) **TUNNEL VISION.** It forces the eyes to concentrate on the threat to the exclusion of all else.

This last effect, tunnel vision, is the key to understanding proper combat shooting methods. It is a physical impossibility to look at the front post of your sights when someone is actually firing at you from close range. Tunnel vision takes over and the only thing you can look at is the threat to your life.

Unless you have been trained in firing by instinctive pointing, you'll jerk the trigger and fire wildly, if you even fire at all. If you are skilled in firing by instinctive pointing you will hit with most of your rounds. Why? Because your motor nerves have been trained for spontaneous response or "reflex action" and your aiming *does not* require the use of sights!

Eye Concentration—Sport shooting has its place as a sport; it has *no* place in combat shooting. The skills required to aim sights and hit targets that don't shoot back do *not* relate to gunfights. *Gunfighting skill requires the ability to hit wherever the eyes "point."* You gain this skill by constant drills, including dry firing at your image in a mirror until the muzzle always points exactly where the eyes look. The key is eye concentration. The more *intently* you look the more accurate your aim.

Instinctive pointing as a handgun combat method has a long history. It was used by Capt. W.E. Fairbairn of the Shanghai Municipal Police in the 1920s and later by the O.S.S. in World War 2. Previously it was used by the Texas Rangers fighting Comanches on horseback and by the U.S. Cavalry in the Civil War and the Indian Wars of the West.

It is interesting to note that the only significant use of the handgun as a military weapon was by mounted troops. Firing a carbine while holding the reins is not easy so cavalry depended on sword and revolver. Instinctive pointing was the *only* method used; ever try to align sights while riding on a charging horse?

Infantry never had any use for the handgun, preferring the musket to the arquebus way back in the 16th century. Even today the military considers the handgun merely as a replacement for the sword—a personal sidearm to be used strictly at sword range. For serious fighting armies use armor, artillery, air support,

machine guns, mortars, assault rifles and submachine guns. They use riflemen, not handgun men.

So who uses the handgun today as a combat weapon? Three main groups: 1) the police, 2) criminals, 3) the honest citizen for self defense. It is important that 1 and 3 learn the correct method of combat shooting to defend themselves from 2. Semiautomatic rifles, semiautomatic shotguns and submachine guns are much better weapons against criminals but they lack the main advantages of the handgun: concealability and absolute portability.

Because of this the handgun is the weapon a police officer will probably be carrying when confronted by an armed assailant. It is imperative he be trained to use it properly. I urge that *present training methods be replaced with the instinctive pointing method!*

Because it is so natural, instinctive pointing can be learned in a short time. I teach a one-handed grip from a boxer's stance and in four hours cover all there is to know. After that the student progresses by training on his own. Dry-firing practice, including training in front of a mirror is just as important as live firing on a range.

I recommend firing 200 rounds once a month for the first year and after that proficiency can be maintained by firing 50 rounds once a month. After a few years of training many students report they can maintain proficiency by monthly dry-fire training and live firing of 50 rounds only *twice a year*. While I don't recommend such infrequent live firing for police officers, it certainly saves ammo for citizen self-defense shooters!

I recommend the .38 Special revolver as the best defensive handgun for men and women but I also like the Colt .45 semiautomatic for its reliability, stopping power and speed of reloading. I don't like .357 or .44 Magnums as defensive weapons because of their excessive flash, blast and recoil. However, if *you* like a magnum weapon then use it.

Hopefully you will never have to fire a handgun in actual combat but if your interest is strictly self defense, your point-firing training will pay off when and if the need arises. So long as the *will* to fight is there, the performance of individuals and even armies in combat relates directly to their training. The Swiss Army has never fought a battle but their training methods are so excellent they are considered to be one of the best armies in the world. When you consider that they are 99 percent reservists this says a lot for training!

And going back to 60 A.D. what could be a greater tribute to training methods than the words of Josephus, the Jewish general and historian when he described the Roman Army: "Their drills are bloodless battles, their battles bloody drills."

May you only know drills and may they be drills in instinctive pointing, the proper method of using a handgun in combat.

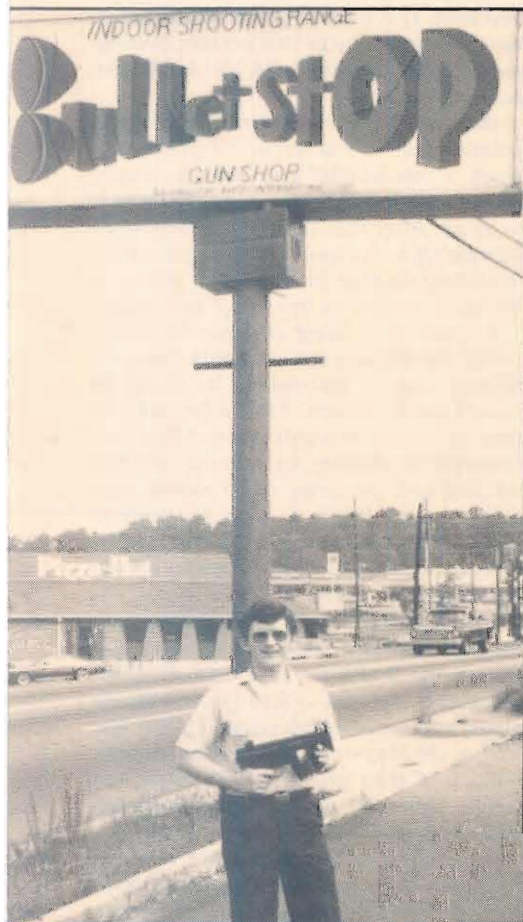
(Continued on page 75)

Full-Auto Education:

The Bullet Stop

Machine gun rentals and all the ammo you'd care to buy...

By Dan Leadbetter



Paul LaVista holding an H&K MP5K submachine gun in front of his indoor shooting range and gun store.

ABOUT 12 miles from Atlanta, Georgia, neatly tucked away in a small town called Marietta is a gun store called the Bullet Stop. From the outside, this firearm emporium may look like your basic gun shop and indoor shooting range, but upon closer inspection you will find the added attraction of fully automatic weapons to rent at your disposal.

Yes, it's true. You can go in, rent a submachine gun and fire all the ammunition you care to purchase. Now, this is not to say that they turn you loose with an Uzi and 300 rounds of ammo to go blasting ap

the woods behind the store, the Bullet Stop has its own full-auto shooting range adjacent to the pistol range. When the weapons are rented, a well trained employee is present at all times to disperse the loaded magazines and give general instructions on shooting as well as helpful hints to improve accuracy.

This year-and-a-half-old business is the brainchild of Paul LaVista, who not only owns and runs the Bullet Stop, but is involved in several intensive training programs that are taught on a secluded 60-acre parcel of land in Georgia. The training programs include classroom and range instruction with emphasis on weapon accuracy, speed, mental conditioning and stress firing in combat handgun, combat shotgun and submachine gun courses. Other courses offered include situation awareness and counter terrorist orientation.

The Bullet Stop also has NRA rifle classes on Sunday mornings, with a certificate issued to each individual upon completion of the course. For information on any of the above courses, write for information to the Bullet Stop, 723 Sandtown Road S.W., Dept. ASG, Marietta, GA 30060.

But the real attraction is the indoor machine gun range which gets visitors from all over the world, including Japan, Australia and Canada. Those using the range are from 8 years old all the way up to 90, and come from all walks of life, so you could say that there isn't one particular type of person that comes in to shoot machine guns.

While we were there, about 8 to 10 people came in to shoot, one group was a father, daughter and two sons.

The group had purchased watermelons and coconuts from the store. Paul led them past the wooden doors and over to the machine gun range. After a watermelon was placed half way down the range and an exploding target was attached, the boys headed back to the shooting area where the gun they selected was waiting.

The employee in attendance inserted the magazine into the .45-caliber Thompson submachine gun and handed it to the boy after he had put on his eye and hearing protectors. The young man then peered down the sights and gently squeezed the

trigger, sending an explosive three-round burst that turned half of the watermelon into an unidentifiable mass. The gun was then handed over to the eldest boy who sighted in on the exploding target and blasted off about six rounds before hitting his mark, leaving the melon in a state of total destruction. After two more magazines had been fed through the gun, the boys said to their father, "That was fun, can we shoot another one?" Over the course of a half-hour the family shot a MAC-10, Thompson .45 cal., and an H&K MP5K.

Having never fired an automatic weapon, it was then my turn to shoot. My first gun was the H&K MP5K machine pistol. The adrenalin started flowing through my body as I put on my hearing protectors and eye wear. The attendant inserted the 25-round magazine into the submachine gun and as I took it into my hands, I have to admit I felt a little bit like Rambo or Scarface.

I then moved the selector from safety to full auto and pulled the trigger. The next thing I remember was the gun not firing, and I had figured it had jammed. The attendant looked at the gun and said, "Everything's OK, you just ran out of ammo." Twenty-five rounds of 9mm ammunition in three seconds, now that's fast! After going through another full magazine, I moved in to try out some of the more exotic hardware, like the MAC-10, M3 .45-cal. "grease gun," Thompson SMG and the Uzi 9mm SMG. I found these guns to be very easy to handle and quite accurate when the stocks were extended.

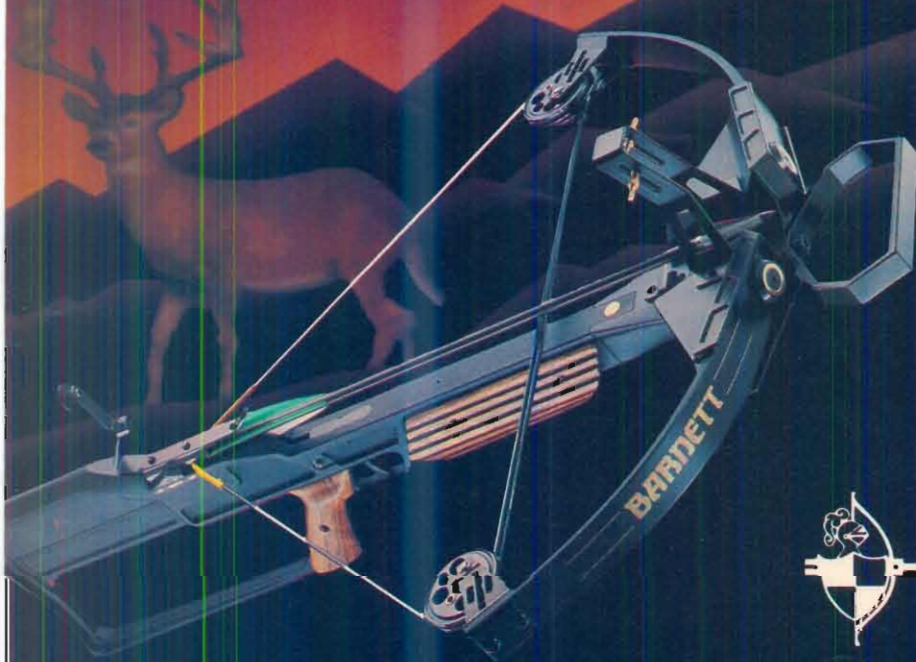
Paul LaVista told me that the difference between real guns and the machine guns used in Hollywood is "Real machine guns are easy to handle and do run out of ammunition."

The experience of shooting a fully automatic weapon is very much like a roller coaster ride, it only lasts a few moments, but you remember it for weeks afterward. If you are ever in the Atlanta area, make sure the Bullet Stop is one of the places on your sightseeing agenda. They're located at 723 Sandtown Rd. S.W., Marietta, Georgia 30060; or give them a call at (404) 425-3597. ■



The Bullet Stop's selection of automatic weaponry. Inset: LaVista in his office.

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Cordage:

Rope

There are many times in the outdoors when we find ourselves in need of a rope, cord, or even a piece of string . . .

By David M. Kinotts

ROPE. It's one of the oldest tools known to man. For thousands of years, man has twisted vines and plant fibers to make rope. Primitive man first used rope to bind simple tools to handles. Ropes were vital elements in the construction of the pyramids and long before the first European explorer arrived in Central and South America, Indian tribes were crossing deep valleys on rope suspension bridges.

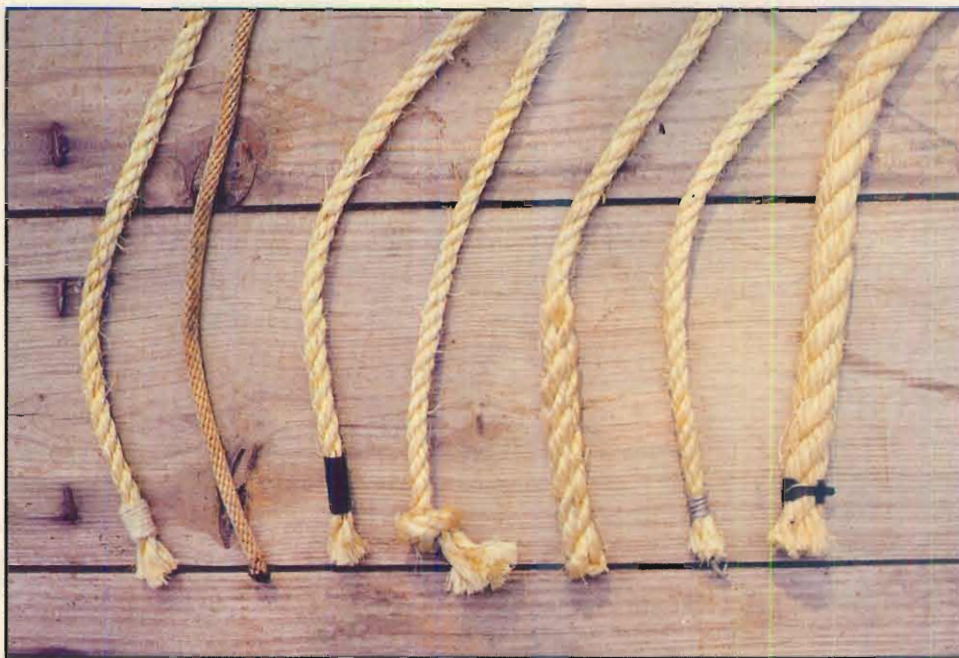
Rope enabled our own pioneer forefathers to improvise shelters and rig temporary bridges to provide safe crossing of rain swollen creeks and streams. Rafts were lashed to carry passengers and gear across larger bodies of water or haul the mountain man's furs to market, and camp implements were constructed as needed in the absence of nails—a rare commodity on the frontier.

There are many times in the outdoors that we find ourselves in need of a rope, cord, or even a piece of string.

There are many methods of making cordage from natural materials that have been developed over the centuries and passed down by our pioneer forefathers. Rawhide, sinew, and plant fibers are examples of such materials.

Sinew, which comes from the long tendons in the legs and back of animals, can be made into cordage that is second to no other natural material in strength. Primitive man primarily used it for bowstrings and to haft arrow points and other tools to wooden shafts. In a survival situation it can be used as cordage to meet almost any tying needs. Sinew's greatest disadvantage is its availability. If you are fortunate enough to kill a deer, or another big game animal then a moderate supply will be available.

To prepare, remove the tendons from the animal, clean and place in the sun until they are hard and dry. The sinew is then pounded between two rocks until soft, fluffy and white. They will then strip apart into fine threads which can be used for



ABOVE — These rope strands show different methods of whipping, used to keep the rope from unraveling. From left are American whipping, in which twine loops are wrapped around the rope 1/4-inch from the end; melting ends of nylon rope with a candle until the strands fuse; tape wrapped around the rope 1/4-inch from the ends; using an overhand knot (only good as a temporary whip); back splice (most permanent whipping method) in which a crown knot is tied after unraveling the rope end about 2 inches long; and the use of wire or clamp (least desirable because of injuries the wire can cause to hands).

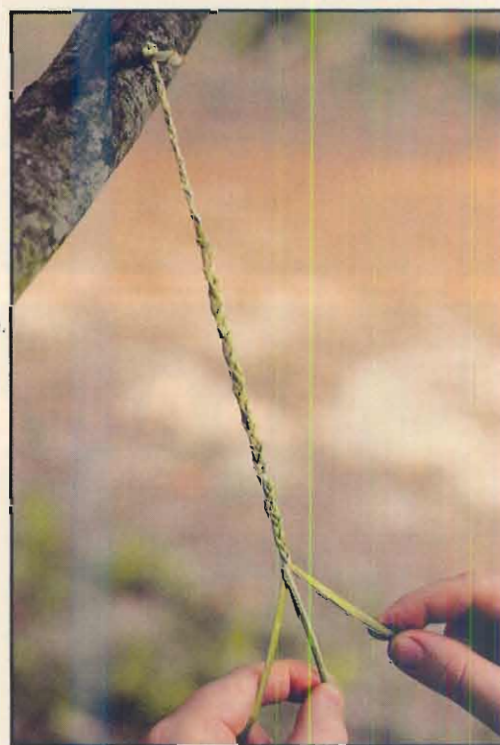
RIGHT — A Yucca strand is braided into cordage.

sewing or twisted into cordage. When wrapping or hafting something, apply the sinew wet. It produces enough of its own glue to bind firmly without a need to be tied.

The most readily available materials for rope construction are plant fibers. Milkweed (*Asclepias*), Dogbane (*Apocynum cannabinum*) and Yucca (*Liliaceae*) top the list as some of the preferred plants for cordage fibers. Bark from Hawthorn, willow, elm, cedar, juniper and sagebrush will work in pinch, but is not as strong as bullrush, cattails and other broadleaf plants, although these do have a wide variety of uses in tying and construction. Not to be overlooked are vines and the whip-like roots of some plants.

Fiber may be separated from the dry stalks of some plants by pounding and cleaning by hand to remove the woody parts. Care should be exercised to avoid damaging the fibers through excessive pounding. Either the outer hairy fibrous layer or the inner white layer of the bark of trees may be twisted into cordage. Bark is usually strongest when wet and has a tendency to become stiff when dry.

One of the best ways of separating fibers from plants is an ancient process called retting. This is a bacterial process which in principle consists of the breaking down of



pectic substances between the cell walls of the individual cells of the tissue surrounding the plant. As a result, the stems become separated from the surrounding tissue and can be easily extracted by hand. There are several methods of retting, all of which are slimy, odorous, and unpleasant when done on a large scale.

Dew retting is most successfully carried on in areas that have heavy dew at night and warm temperatures during the day. The stalks are spread out in rows on the grass and are turned regularly during the day so that all stems and surfaces are equally exposed to moisture and sunshine. Dew retting is slower than other processes and takes at least two or three weeks.

Using a "Y" shaped stick keeps strands straight when using the rope machine.



Because it is slower, it is less likely to result in "over-retting" and damage to the fibers.

Running and stagnant water retting are carried on in a similar fashion to each other except that stagnant water retting is likely to be faster because the products of bacterial action are not carried off and thus have a cumulative effect. The stalks are placed in crates or tied together in bundles and weighted down with stones to keep the entire length of the stems submerged after bacterial action commences.

In running water retting, it is often necessary to construct a fence or barrier to prevent bundles from being carried down stream. Stalks being retted by either method must be watched closely because removing them from the water (which stops the fermentation) at just the right moment is critical to the quality of the resulting fiber. It is important to note that water from pool retting has had most of the oxygen removed and, until aerated, is unfit for human, animal, or aquatic use. Most countries prohibit the retting of stalks in streams or rivers.

Tank retting is the method that seems to be replacing other methods today. Commercial operations utilize specially constructed tanks. However, tubs and barrels will serve the same purpose as will a pit or trench. A constant lukewarm water temperature is maintained at all times. Some of the water may be drained off each day and fresh water added so that fermentation can be more carefully controlled. Tank retting may take only a few days as compared to running water retting, depending on the temperature of the water and the swiftness of the current.

Thorough drying is necessary after any of the retting methods to prevent further fermentation. The fibers may then be stored for long periods of time before use.

Cordage—Whether plant fibers are obtained by pounding or retting, they may be twisted into cordage as follows:

- Two Strips of fiber are selected and held in the left hand between the thumb and forefinger.
- The fiber farthest from the body is grasped in the fingers of the right hand and twisted clockwise.
- The twisted strand is then laid

counterclockwise over the other strand and becomes the one closest to the body.

- The second strand (now the farthest from the body) is twisted and laid over the first strand in the same manner. This is continued until the ends of the strands are reached.

- Other lengths of fiber are spliced on at this point. One does this by twisting the last two inches of the ends onto the new fibers and continuing the process of twisting and folding. It is best to alternate the lengths of the strands so that both splices do not appear at the same place in the finished string. (*Outdoor Survival Skills*, by Larry Dean Olsen, 1970)

Completed strands may be twisted or braided together with other strands to make larger ropes.

Short strands for tying or sewing a few stitches may be made quickly by rolling a long strand with the palm of your hand in one direction. When it is rolled tight, hold the middle with one hand and fold the two ends together, keeping both lengths taut. Retain a firm grip on the two ends and let the folded part go. The tension produced from the twisted roll will automatically twine the two cords together resulting in a 2-strand cord which is half the length of the length of the original strand (thus a 6-foot strand will make a 3-foot cord).

Rope can also be made from existing cord or twine by means of simple home-made mechanical rope twister. Where binder twine or string are often considered too weak for normal pioneering work, these twistors can turn them into useful lengths of rope.

One of the simplest rope twistors was developed by the Pomo Indians. The Pomo's lived along the California coast and were noted for their excellent grass and horsehair ropes.

Their rope twister consisted of three basic parts: 1) the handle 2) the twister and 3) the anchor hook. To use, have one person hold the anchor hook while another operates the twister. String two strands of binder twine or cord of equal length tightly from the hook to the round knob on the twister (a third strand may be added for a 3-strand rope). The twine should be more than twice the desired length of the finished rope. Twist the twine together by flipping the twister clockwise. Keep count



A homemade rope machine for twisting twine and small cord into rope.

of the number of twists needed until the two twine strands are solidly together. Remove the end from the twister knob and fold in half attaching the knob end to the anchor along with the other end. It is important that during this process, the twisted twine is kept taut and prevented from curling or tangling together. When the strand has been doubled, place the middle half where the strand bends on the knob of the twister.

Twist the two strands together by flipping the twister counterclockwise. When the strands are together solidly, take both ends of the new rope off the hook and knob and allow it to "untwist" itself. You will then have completed a rope.

Another rope machine used by early pioneers consists of 5 parts: 1) base board 2) handle 3) hooks 4) rope wrench and 5) anchor. To make rope with the rope machine, simply tie the end of a strand to a hook with a slip knot and stretch the strands from the hooks around the rope wrench and back to the hooks. Make sure there are the same number of strands on each hook. About three strands to each hook makes a medium sized rope. The end of the strands behind the rope wrench are secured to an anchor that is held by someone else or to a firm, stationary object.

With the handle, start turning the wire cranks, holding the strands apart with the wrench until they are fairly tight. Take hold of the strands behind the wrench and begin twisting them slowly together as the wrench is moved forward. The rope will go into shape itself and remain there, but the wrench should be used to ensure even twisting and to prevent kinks. The cranks should be twisted slowly while the rope is being formed. When completed, the rope

(Continued on page 58)

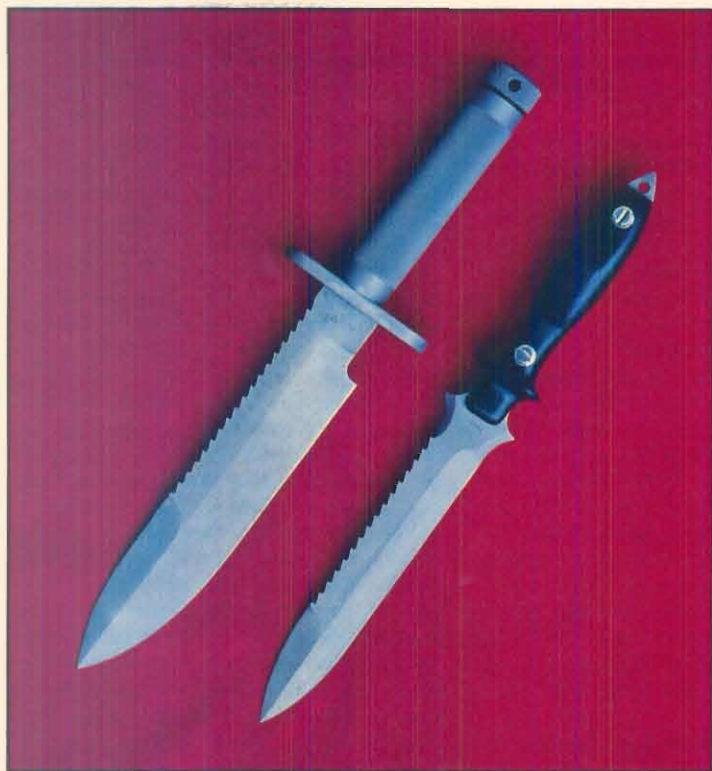


When coiling rope, one end is taken in the left hand; the right hand is run along the rope until both arms are outstretched. The hands are then brought together forming a loop which is laid in the left hand. This is repeated forming uniform loops until the rope is completely coiled.

Hollow Handle, Full Tang:

Survival Knife Alternatives

With appeal and inventiveness, solutions or alternatives to the problems at hand are usually found . . .



By Douglas C. Berner

(The author has written a comprehensive book on survival knives, Survival Knife Reference Guide, which is reviewed in this issue's book review section—The editors.)

LEFT — The tubular hollow handled "Survivor" by Robert Parrish, left, and the "Firebrat" designed by the author and made by Parrish, are two of the latest survival knife designs.

BELOW — The micarta scales are removed from the Firebrat showing the slotted tang storage space.



A TYPICAL IMAGE that comes to mind when the subject of survival knives is mentioned is that of a saw-tooth shrouded blade attached to a tubular hollow handle filled with survival paraphernalia and sealed with a removable butt cap.

At least this is the popular perception that has been fostered by knives such as W.D. Randall's Model 18 "Attack-Survival," Jimmy Lile's "First Blood," and many other custom and commercial knives that have been inspired by them. However, there are some striking alternatives to this image of the survival knife as having a tubular hollow handle with a removable butt cap. This article will review different types of survival knife designs and the reasons behind them.

As with any other concept or product, there are those who argue for and against the practicality of hollow handle survival knives. In this case the main criticism stems from the fact that hollow handled knives are compromise packages. A conflict exists between the need for a strong junction between the blade and the handle and the desire to provide storage space for survival items inside the handle.

One of the reasons for the appeal of the

tubular hollow handle is that for similarly sized handles the tubular shape generally provides a greater amount of usable storage space. Another factor is that the tubular type is the easier and more effective to waterproof than any other type of storage handle. However, for the most part, the tubular hollow storage space which many view as an advantage is obtained by sacrificing the size and form of the tang.

The tank of a knife is the portion of the steel from which the blade is formed that is incorporated into the handle. A strong, well designed blade will not make a good knife if it is joined to a weak or poorly attached handle. The tang of the blade traditionally acts as a skeleton for the handle by providing strong support and in many instances, form as well. The tang is usually the same thickness as the blade and generally the wider and longer the piece of steel that forms the tang then the stronger the union will be between the blade and handle. Logically then, maximum support is afforded by the tang whose steel extends through the complete length and width of the handle.

Does this mean that tubular hollow handle knives are structurally too weak to

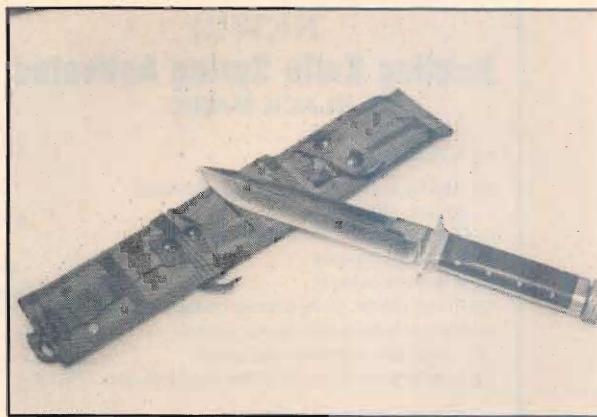
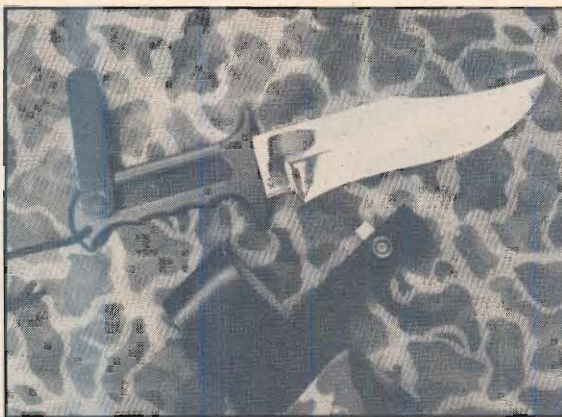
function and should thus be avoided? Absolutely not! Where the combination of appeal and the ingenious inventiveness of human nature are present, solutions or alternatives to the problems at hand are usually found. The response of the knife-makers to the challenges presented by survival knives is no exception. Both innovative solutions to the problem of joining a blade to a tubular handle and practical alternatives to the tubular type handle for providing handle storage space have emerged.

Various techniques of threading, bolting, pinning, soldering, welding, and epoxying have been devised by the knife-makers to strengthen the attachment of a tubular handle.

Robert Parrish has obtained a very solid mortised and threaded hookup for his "Survivor" model survival and combat knife. Mike England has tried investment casting the blade, guard, and hollow handle, as one piece for his "Model 25" but has settled on heliarc welding the handle to the cast guard and blade. Timberline, for their "Model 3A" and "Model SB," has threaded both the tang and the handle, into and onto a double nutted insert. For his Fierce Blood models,

RIGHT — A plastic panel is rotated out of the way to expose the tang storage area in the handle of the "Combat Master" by Blackie Collins.

FAR RIGHT — This is Peter Bauchop's unusual full length tang hollow handle survival knife with nylon sheath.



FAR LEFT — The hidden compartment tang storage is demonstrated on the "Recon Special" by John Bartlow.

LEFT — Here are Lee Gene Baskett's "Model 11-A" tubular hollow handle survival knife with screwdriver tip in the butt cap, top, and Baskett's "Model 13-A" compartmented tang storage fighting knife with micarta grip partially removed showing compass, split shot, fish hooks and line and matches in separate compartments.

Colin Cox has a threaded tang which passes through a sleeve inside the hollow handle where it is secured by a nut and is also soldered and epoxied.

There are many quality examples of the basic tubular hollow handle design including Jimmy Lile's "Sly II," Gene Baskett's "Model 11-A," Tony Louis, Jr.'s "Serious Survival," and others by Colin Cox, John Salley, and other custom and commercial knifemakers.

Options—But what options do the knifemakers provide for the person who just does not want a tubular hollow handle type survival knife? There are survival knife designs that provide storage space inside the handle while retaining most of the advantages of a full tang. These are usually referred to as tang storage or hidden compartment knives. They are formed by cutting out a portion of the steel tang under the handle material and/or hollowing out the handle slab material over the tang. The cavity thus created can be filled with matches, fish hooks, and other small survival items. It is then concealed by the material that is utilized to form the handle grip. This usually takes the form of removable handle slabs which are fastened to the steel of the tang by bolts or screws. The primary advantage of this type of storage system is that most of the strength inherent in the full width and full length tang is maintained. It can also be incorporated into either fighting or utility styles of knives. The disadvantage of this type design is that access to the items stored inside the handle is complicated by the need for a tool to remove or open the

handle material. Whatever form that this tool takes, it must be easily carried and available when needed. The loss of this tool, be it a screwdriver or allen wrench, could pose considerable inconvenience.

The knife that Major Gordon Cooper worked out with W.D. Randall for the astronauts of NASA's Project Mercury in the early 1960s, incorporated this type of slotted tang storage. Randall's Model 17 "Astro" features a 5 1/2-inch long blade of 1/4-inch thick stainless steel and a 4 3/8-inch long straight handle. A slot is cut out of the full sized tang, which is then covered with hollowed out micarta scales secured by stainless steel bolts. The original Astros included a key shaped screwdriver carried on a thong tied through a hole in the butt of the knife. This knife is still available from Randall Made Knives in Orlando, Florida.

Lee Gene Baskett creates his Model 13-A Fighting Knife with removable micarta slabs. The skeleton of his knife consists of a 6-inch blade and a 6-inch curved tang of 1/4-inch thick 440C stainless or 0-1 tool steel. The handle slabs are retained by allen screws and the appropriate allen wrench is provided in a special slot on the knife's leather sheath. Baskett has taken the standard approach of cutting a rectangular slot out of the tang a step further. His original technique of drilling holes in the tang, in addition to the storage slot, to reduce weight has developed into a specialized storage system. The compartments he drills are now spaced and formed to fit specific items. He includes a small compass, fish hooks, and split shot in small separate cavities and

provides the larger slot for matches and fishing line.

John Bartlow also offers a similar tang storage fighting knife that conceals multiple cutouts under removable micarta slabs. He calls the knife the "Recon Special" and it is patterned after his friend Baskett's Model 13-A. The Recon Special consists of a single edged, straight clip point blade with a notched integral double guard and is constructed from 1/4-inch thick 0-1 tool steel. Bartlow makes his own leather sheaths and includes an allen wrench inside the pocket on the sheath with a sharpening stone.

Smaller Knives—For those who prefer smaller knives, Timberline provides the "Survival Hunter." It is a drop point design with an overall length of 7 5/8 inches and is formed from 3/16-inch thick 440C stainless steel. Timberline retains a non-slotted, full width, full length tang for the Survival Hunter and incorporates survival storage by simply hollowing out cavities in the micarta handle slabs. A compass, fishing flies, hooks, line, split shot, and nylon cord are all nestled into the recesses on the inside of both micarta handles. These grips are attached to the sides of the tang by screws and are readily removed using a small hardened steel broadhead. This broadhead is carried in a slot behind the belt loop on the leather sheath.

Robert Parrish recently made a slotted tang storage combat knife that I designed and named the "Firebrat." The double edged, spear point blade incorporates the

(Continued on page 60)

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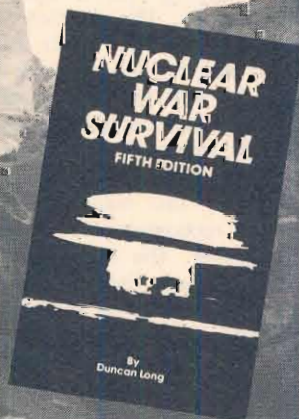
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Book Reviews

(Continued from page 9)



Resistance Fighter: Anti-Nazi Terror Tactics of the Austrian Underground, by Kurt Von Steiner; Paladin Press, Dept. ASG, P.O. Box 1307, Boulder, CO 80306; (303) 443-7250; 108 pages, paperback; \$10 plus \$3 postage and handling.

The resistance movement in Nazi-occupied Vienna began as a disorganized group of anti-Nazis, writes the author, who describes events he took part in and knew of from about mid-1937 until mid-1938 when he left Vienna after the Gestapo put a price on his head of 5,000 deutsch marks, dead or alive. "Although poorly organized and trained," says Von Steiner, "we were a gigantic thorn in the side of the Nazi supermen. By undermining their heretofore unchallenged superiority, we conducted our own brand of psychological warfare." Illustrated with drawings and pictures of resistance weapons and news pictures from the time period, this book details the underground battle against the Nazis. At first, homemade stink bombs broke up Nazi rallies and meetings; coffee laced with laxatives and potent unripe wine were fed to unsuspecting soldiers; and other pranks were used to frustrate and anger Vienna's occupiers. But as the brutal Nazi oppression grew more terrible and lethal, so too, did the resistance fighters develop into ruthless killers. Through arson, torture, assassination with improvised weapons such as newspaper daggers and makeshift firebombs, the resistance made the Nazis pay for their presence. Fencing foils wrapped with barbed wire, improvised explosives and crude but effective garrotes were used to disfigure and kill the oppressors as they relentlessly sought and destroyed those who opposed them. Von Steiner includes many first-hand accounts of resistance attacks and battles along with practical information on the underground's organization and communications; street fighting tactics; weapons; psychological warfare tactics; and other aspects of the resistance movement. ●

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In The U.S.:

Nuclear Shelters

Nuclear detonations and fallout are such threats that the days of the do-it-yourself shelters are practically over . . .

By Marcel M. Barbier

(The author is a consultant on radiation hazards and his company designs and builds nuclear shelters—The editors.)

THE FIRST shelter design in the United States was probably that of the Federal Emergency Management Agency (FEMA). The concept apparently dates back to the early 1960s. It is practically a concrete box, with heavy reinforcement, has a rectangular hatch in the ceiling closed by a heavy wooden door with 8-foot ladder leading down. It can be used either as a basement shelter incorporated in the house or as a detached "patio" shelter nearby.

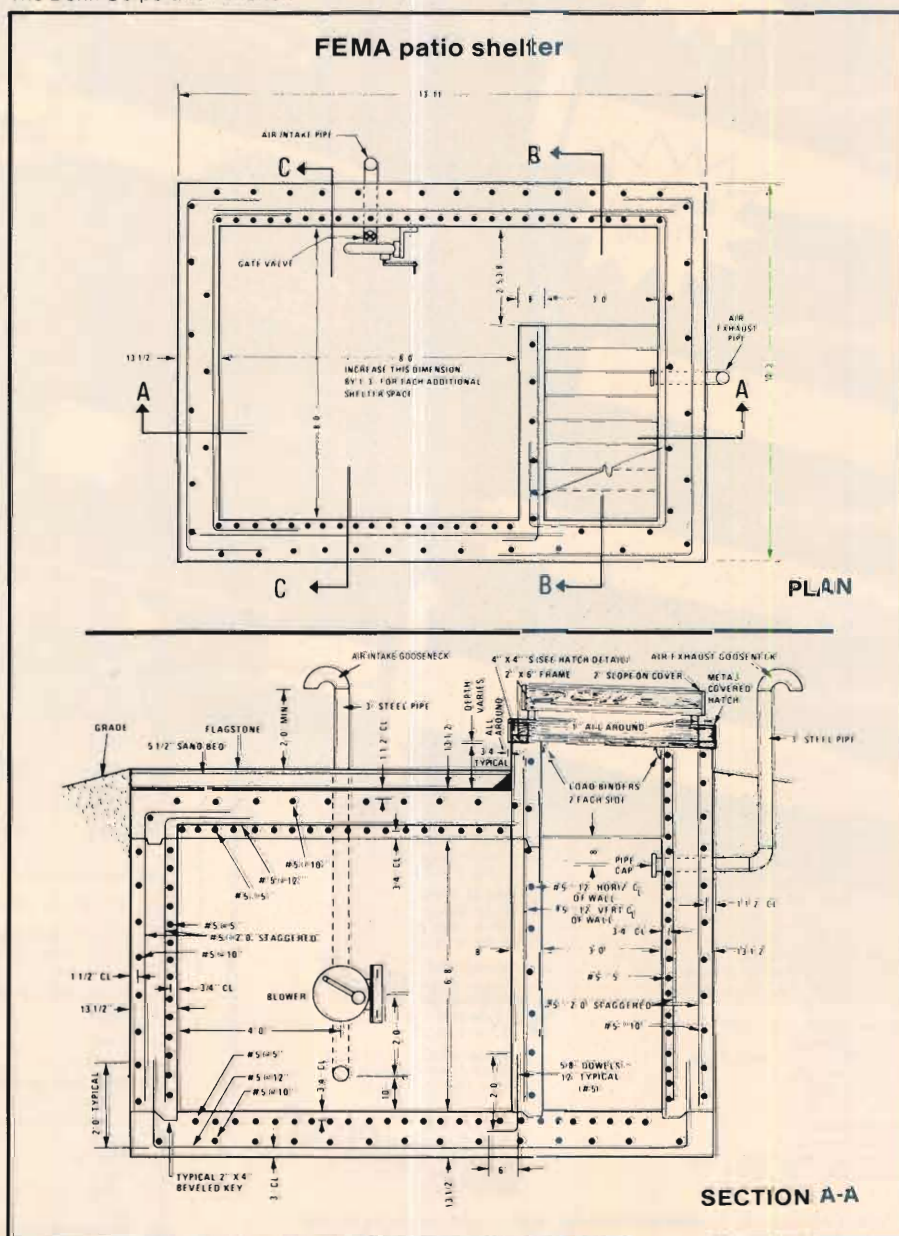
In 1977, Donn Corporation developed and successfully tested a corrugated steel shelter of cylindrical shape made of bolted steel plates communicating with the outside through L-shaped tunnels closed with round blast doors carrying blast valves. With a plate thickness of 0.064 inches and an interior diameter of 78 inches the tested shelter buried in the Nevada desert withstood in excess of 50 pounds per square inch of pressure. These tests proved that thin walled metallic structures of adequate shape could resist both the "air slap" (air overpressure wave) and the ground shock wave, by taking advantage of "earth arching."

Another important design was that of John Brodie in the early 1980s. His shelter is egg shaped and made of fiberglass reinforced plastic. It is organized inside as a ship's cabin to make the stay inside as enjoyable as possible and thereby relieve the stress. What was attempted was to make a "biosphere" independent of the external environment. The shelter is connected to an outside water cistern and to a septic tank. It is ideal for underground living and as fallout shelter. However it was not intended to serve as a blast shelter.

Another design was done by Dick Man-

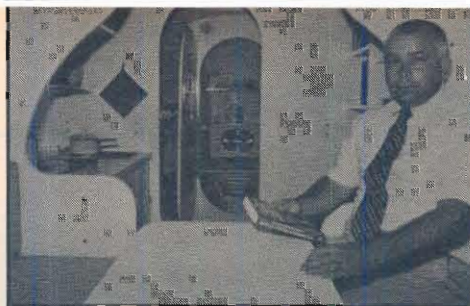


The Donn Corporation shelter.

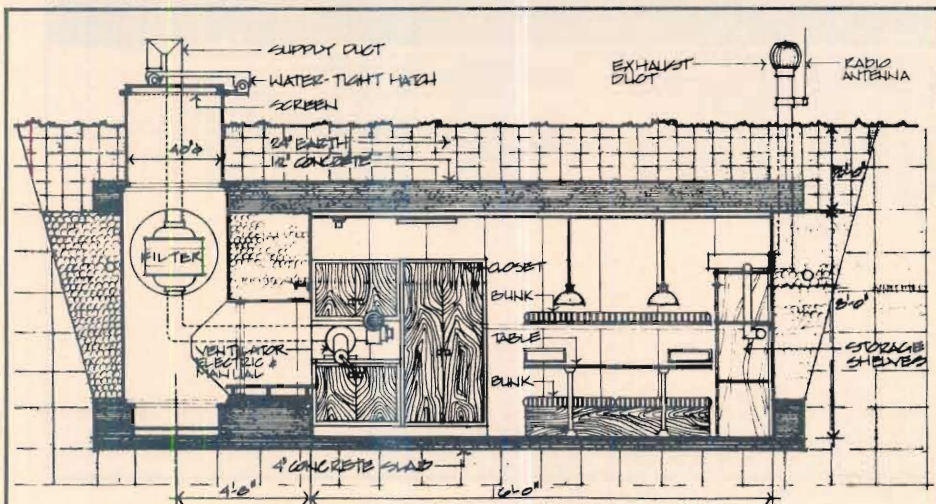




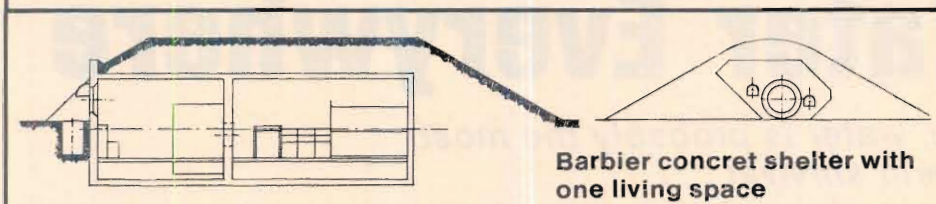
The "biosphere."



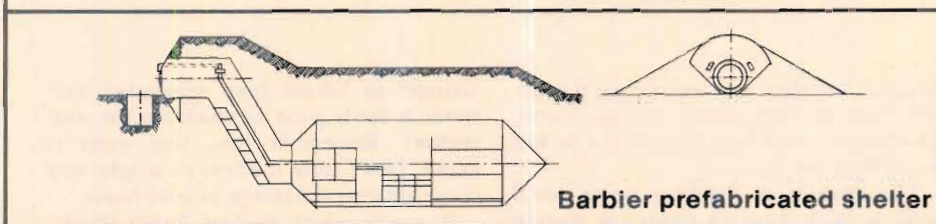
Interior of the biosphere.



Longitudinal section of the Survival Center shelter



Barbier concret shelter with one living space



Barbier prefabricated shelter

kamyar of the Survival Center, Ravenna, Ohio. It is blast resistant and uses a quasi-cylindrical shell of bolted corrugated steel plates. The ends are closed by flat plates strengthened by I-beams. The exit is through an L-shaped tunnel connected either vertically to ground surface or horizontally to the outside if one has a slope. The shelter is sold either built in place, or as a kit for those who want to assemble the plates themselves.

Finally I would like to mention the models that my company has developed. A first model is a prefabricated, drop-into-the-hole unit. It is corrugated, entirely welded and made of non-rusting material. It has been designed in such a way that it can be transported by truck without restrictions. It has a double bend entryway and a cylindrical living space with rooms for eight berths. Several of these units can be welded together in a line. A certain thickness of gravel is put in around the shelter for added strength, as the gravel

locks under overpressure and provides arching over the shelter.

Next comes the series of reinforced concrete shelters of increasing sizes. They are all built as horizontal cylinders and have at least two rooms separated by a wall: one entrance compartment, large enough for passing a stretcher, serving as labyrinth, decontamination area and storage place, and a living space. The interior diameter is sufficient for accepting an array of 3- x 3-foot berths in the smaller model, and 4- x 4-foot berths in the larger model. To these three (or four) berths on top of each other can be added on one side of the remainder of the living space, giving a total of 12 to 20 berths per living space. Shelters with one entrance can be built with up to two living spaces and shelters with two entrances can be built with four living spaces giving room for up to 80 berths. There seems to be an economical optimum at this size which is the maximum one can do with a single cylinder; if one goes further one has to

place cylinders side by side and connect them, which makes the construction more expensive because one loses the geometrical simplicity of the single cylinder.

The doors of all our shelters have been especially designed so that they open inwardly. We also have designed our own blast valves. Both door parts and blast valves are light enough so that they can be carried by hand and a crane is not needed on site.

A bicycle type electrical generator, for running lights and ventilation from a battery is also available.

From all these examples one sees that the person concerned has a collection of shelters available in the United States from which to choose.

Nuclear detonations and even fallout are such a threat, that the do-it-yourself times are practically over. One still hears people say they "will put some protection in their basement." The problem with basement shelters is that there is no room on top to place shielding. At least 14 inches of concrete are required to have some fallout protection. A concrete slab of this thickness has to be reinforced and tied to the vertical walls supporting it, which have therefore also to be reinforced. Other arrangements, such as sand bags on wood scaffolding, are shaky at best and will collapse at the first earth tremor due to a bomb or an earthquake.

Another aspect is that "single family" shelters are still expensive, in spite of years of design efforts to reduce their price, and may be too expensive for the single family in many cases. The way out is to share the shelter with similarly thinking families.

Psychologically and physically, the stress is also better endured if there are several families: there are more adults to do the hard work, to take care of the children, and so on.

This points out that there is a future for group shelters. There will certainly be better chances of survival if there are small communities holding together.

Given that the government does not seem to be building shelters for us, the whole country should be covered by local communities, clubs and associations channeling private initiative and funds into building the required shelters. This is necessary lest, as the insurance salesman says, "God forbid . . ." ●

References

- FEMA (Federal Emergency Management Agency), Publications Office, 500 C-Street S.W., Federal Center Plaza, Washington D.C. 20472.
- Donn Corporation, 100 Crocker Rd, Westlake, OH 44145.
- John Brodie, Mountain View, Peterborough, NH 03458.
- Richard Mankamyar, The Survival Center, 5555 Newton Falls Road, Ravenna, Ohio 44266.
- Marcel M. Barbier, Inc., P.O. Box 2905, Reston, VA 22090.

Decontamination, Sterilization:



Water may be everywhere around you, but if you don't sterilize it, there may not be a drop to drink.

Water, Water Everywhere

Next to the air we breathe, water is probably the most important thing for long-term survival . . .

By Duncan Long

WE USUALLY take water for granted. While water is almost never scarce in most areas, uncontaminated water might become very scarce following a wide-spread disaster like a nuclear war or economic collapse during which all pollution control endeavors were abandoned.

Next to the air we breathe, water is probably the most important thing for your long-term survival. Though it's possible to go without food for a month or more, without water you'd be lucky to survive for more than a few days.

Fortunately, no matter how contaminated water may be by dangerous organisms, nuclear fallout, or chemicals it is seldom so contaminated it can't be decontaminated and used. Water can't be damaged. IF you can remove the contamination or neutralize it, you will have water you can use for drinking, washing, or cooking.

Of course, you must have a source of water. So your first step toward survival is to locate the springs, wells, streams, etc., in your area so that you will have a good source of water. Find a reliable source of water.

How much water will you need? Unless you have a well or spring in your house or yard, or have a cistern (a large storage tank

designed to collect rain water), you'll probably have to carry water to your house. That means you'll have to do with a lot less water than you now use.

The amount of drinking water you'll need is fairly easy to figure. A human being should have at least a gallon of water per day during hot weather or two quarts per day if the weather is cool, the person doesn't need to do heavy work, and no water is needed for cooking or cleaning. (There are a lot of "ifs" with the two-quart-per-day amount so it's safer to plan on a gallon.)

Chances are, even if you have a large source of water nearby you'll want to store some water. This will allow you to worry about things other than your water supply during the first few weeks of a major disaster. (During a disaster when there might be looters about willing to take pot shots at you, the prospects of dragging gallons of water back to your home or shelter isn't too great of a survival strategy. Nor is dancing through the fallout to get drinking water. It makes a lot of sense to store water for just such emergencies.)

There are a lot of ways to store water. Your first task is to find a place to store it. It should be kept where you can get to it from a fallout shelter without exposing

yourself to fallout (and remember that water is fairly good as shielding for your shelter). Remember, too, that water is heavy. Don't store it where its weight may cause structural damage to your home.

If you're where nuclear bomb shock/blast waves from a close target aren't a concern and aren't in a major earthquake area, then a swimming pool or large tank could be used to give you a huge supply of water.

Most of us aren't in such an area, however, and need to use tough storage containers capable of surviving a little punishment. Storage containers can cost a lot of money.

Fortunately, if you're like most Americans, a lot of potential water storage containers are available to you in the form of soft drink and milk containers. A second good source is available in the form of used food containers available from Dairy Queen stores, restaurants, etc., for free or a small price. With a little clean up, these are ideal for storing water. All you need to do is to be sure the container was designed for food; don't use plastic which is not designed for food storage since it may contain chemicals which will leach into water which is stored in them. My favorite containers are the two-liter pop bottles. These

are tough and easy to move and handle. Plastic milk containers work, too, but seem prone to leakage if they are abused in the least bit.

Don't use glass containers as these can be quite dangerous or may break under the rough-and-ready conditions of a disaster. Things are bad enough during an emergency without having broken glass scattered over your living area and your water supply suddenly down the tubes as it were.

Containers larger than two gallons are harder to handle. Probably the upper limit for practicality is the five-gallon plastic storage containers that are available from a number of survival stores including the Survival Center. When working with any container that's this large, it's a good idea to place it where you want it and then fill it; otherwise you risk wrenched muscles, a bad back, or even a hernia! Also, remember that any filled container, even a two-liter pop bottle, is dangerous if it falls from any height. Secure water storage bottles so someone doesn't get seriously injured by them.

Contaminated Containers—In addition to avoiding plastic containers which are not designed for storing food or water, find out what was in used containers before storing drinking water in them. If they contained any petroleum products or—worse yet—poisonous chemicals, do not use them for storing drinking water. The chemicals will often get into the containers so that there is no way to clean them out. Metal containers should be chosen with care so that they don't rust out; the water can also take on some odd tastes when stored in metal containers. In general, plastic is much better than metal or glass containers for water storage.

In his *Nuclear War Survival Skills*, Cresson H. Kearny shows a good "expedient" water bag that is made with two large plastic garbage bags nestled inside a pillow case or gunny sack. This arrangement allows the cloth to support the plastic bags while the double wall of the plastic bags holds the water. These bags work well provided you have a good way to support them and are careful to secure the opening.

Kearny also offers another excellent way of using plastic sheets to create a pool of water. First, take some shower curtains, raincoats, or whatever, and line a hole dug in the ground with them. Fill the hole with water then cover it with another sheet of plastic and a board to prevent evaporation. There you have it, one pool of water to be used later on.

Except for the last water storage system, care must be taken with any water in a sealed container to be sure it isn't allowed to freeze. Ice can rupture most water containers and your supply of water will then be lost when warm weather comes along again.

Large containers are hard to get water out of. One way of easily doing this is to use flexible plastic tubing to drain or pump

water from them. This is better than dipping water out since you're less apt to spill water and won't get foreign matter into the water. One mail-order source of a wide range of hand pumps and tubing is Industrial Safety and Security Company, 1390 Neubrecht Rd., Lima, OH 45801 (800) 537-9721; prices for the plastic pumps range from \$10 to \$30 depending on the model you select.

A hand pump isn't essential to remove water from large containers if you have a length of hose which can be used to siphon the water out. The secret with siphoning is to have the top of your source of water higher than the point at which the water is to end up. The hose itself must be submerged in the water source but the water can travel above or below the level of either the source or the outlet on its "trip" through the tube. The flow of water is started by sucking on the end of the hose (soda straw-wise). The vacuum created by the falling water will pull more water out of the water container and it then drops to the level of the outlet. To stop the flow, bend or pinch the tube shut or raise the outlet end above the level of the source of water. Industrial Safety and Security Company also has a small plastic faucet which may be used on the end of a hose. Also good is a hose clamp which is available at most plumbing supply stores.

To save water ordinarily used for personal hygiene, pre-moistened towelettes can prove very useful. These towelettes are good at cutting through grime and grease. I feel the best are those designed to be used in cleaning babies. These towelettes are available in most grocery stores around the baby food section. One box of these will save you a lot of water.

If you have to haul water from any distance, you'll also want to do a minimum of dish washing. Forget manners during a crisis: eat out of food containers and have family members "lick clean" their utensils. Have each person use the same utensils for the next meal and there will be little danger of spreading diseases. Also, have a supply of plastic "picnic" utensils, paper plates, styrofoam cups, and paper napkins to use with messy foods.

How safe is the water stored for months or years or gathered from a nearby stream to drink? The answer is simple: it may not be at all safe to drink.

Sterilizing Water—It's not hard to see why water that is taken from a stream or pond might be contaminated. But why would water taken from the tap and stored in sealed containers be dangerous? Most modern municipal water supplies depend on chemical treatment to keep the numbers of bacteria in them at safe limits. The water isn't sterile; it is usually full of bacteria. But their numbers have been lowered to the point that a healthy child or adult can overcome the organisms. But if the water is sealed up for even a few days, the chemical (usually chlorine) will "wear

How safe to drink is the water taken from this stream? It may not be at all safe to drink. But with treatment it can be as safe as any from a city water supply.



Springs can be a good source of water, but any source of water in the "Great Outdoors" can be full of micro-organisms and should not be considered safe without treatment.

out" as it continues to kill the bacteria multiplying in the water. When the chemical has dealt with a number of bacteria, it "wears out" and the germs will be able to multiply unchecked to potentially dangerous levels. While these may not be capable of killing you, they might give you one heck of a stomach upset. And you'll have enough to worry about in a disaster without hitting the bathroom every 10 minutes.

So, for survival purposes, you should treat or sterilize *any* water after it has been stored for any time at all or if it comes from a source where dangerous organisms may be present.

The simplest way of making water safe to drink is to boil it—at a full boil—for at least 15 minutes. Notice that you don't just boil the water. You have to boil it for 15 minutes after it starts to boil; simmering time does not count. Water that's not boiled long enough would be dangerous to drink.

Boiling water is not too practical in some emergency situations. In such cases, using chemicals to kill the bacteria in water is a lot easier. There are a lot of ways to do

Water, Water Everywhere



A lot of potential water storage containers are commonly available in the form of plastic soft drink and milk containers.



A number of chemicals can be used to sterilize water. Besides water purification tablets, there is 2 percent tincture of iodine, and sodium hypochlorite — household bleach.

this. In addition to water purification tablets, two useful chemicals for sterilizing water are 2 percent tincture of iodine, and sodium hypochlorite—the active ingredient found in most household bleach.

With 2 percent tincture of iodine, use five drops per quart of water; with 5.25 percent sodium hypochlorite solution—bleach—use two or three drops. Double the amounts if the water is cloudy or smells bad. As with boiling, the killing of the organisms in the water is not instantaneous; let the water stand for a half hour before drinking it. Tincture of iodine is the most effective of the two in killing bacteria and has a lot of other uses as well but it also tastes worse than hypochlorite solution (since most of us are used to tasting chlorine in our water).

Iodine crystals can also be used but aren't too practical and can be quite dangerous if mixed up in the wrong proportions, which is easy to do. My advice is to *not* use iodine crystals for water sterilization.

Either hypochlorite or iodine should be replaced every few years since they'll lose their potency over time; if you fail to do this, you'll need to increase the dosage slightly to make up for the loss of potency. Important: remember that both these chemicals are poisonous; keep them out of the reach of children and for the same reason don't use too much of any of the chemicals.

Water purification tablets are very handy to have. There are two types: tetraglycine hydroperiodide (an iodine compound) and halazone tablets (a chlorine compound). The tetraglycine hydroperiodide is much better to use than the halazone tablets; some viruses and amoebic cysts are *not* killed by the halazone. The iodine compound is sold under a number of trade names: Potable Aqua, Globaline, and Coghlan's, among others.

Like tincture of iodine, tetraglycine hydroperiodide tablets slowly lose their

potency. If they are kept sealed, are not exposed to bright light, and remain in a cool area, they are good for four years. Halazone tablets last an even shorter time; they'll remain useful for only two years if kept cool and sealed airtight.

Because of the short shelf life of these tablets, avoid military surplus purification tablets since they'll probably have lost their ability to kill organisms which might be in the water by the time the government has unloaded them.

Follow the directions on the purification tablets' container. For *most* tablets this means one halazone tablet per quart of clear water; with chlorine tablets, five per quart; and Potable Aqua tablets, one per quart. Double the number of tablets for hazy or foul-smelling water. Again, it takes time for the chemicals to work so be sure to wait for 30 minutes after the tablet has dissolved before using the water.

Chemical contamination can be removed from drinking water with an activated carbon filter. These are easy to make and use. See "Homemade Water Filters" in the February 1986 issue of *American Survival Guide*.

Fallout—During a nuclear war, water from a pond, stream, or river might also contain fallout. While the radiation from this fallout might be at a safe level for *outside* your body, the inside of your body is much more sensitive to radiation damage and will store some isotopes in certain organs of the body where they become dangerous because of their higher concentration. Therefore, you need to go through an extra step *before* you sterilize any water which might have fallout in it.

Fortunately, most fallout particles are heavy enough that they will fall to the bottom of a body of water and will soon be covered with sediment. Fallout doesn't harm water and any radioactive particles in water can be filtered out of it. While there may still be radioactive trace

elements in the water in a gaseous form, these will be quite small and at safe levels by the time you can be outside a shelter looking for water.

One method of filtering fallout out of water is to strain the water through a paper towel or several layers of a clean cloth (we're assuming that neither cloth nor towel are contaminated). Another good filtering material is a coffee filter designed for an automatic coffee maker. With any of these, the water should flow slowly through the material into a second container. Don't try to over use your filter; discard it after you've used it for a while. And remember that the filter will become full of potentially dangerous radioactive particles.

A more efficient filter can be created with a five-gallon can or bucket. Punch small holes all over the bucket's bottom, cover the bottom with several inches of cleaned small rocks (or—in a pinch—twigs), spread a finely woven cloth over the rocks, and on top of the cloth place 7 to 10 inches of soil (sandy soil won't work but any other type of dirt will). To filter water, let the water trickle into the top of the earth filter and place a container under it to catch the water as it drips out of the bottom of the can or bucket. This water *must* be sterilized before you drink it. Again, after the filter has been used for a while, replace the rocks, dirt, and cloth and start over. Again, remember that high levels of fallout may be present in the filter material.

Even if you can't filter water that may contain fallout, you can do a lot to minimize the amount of fallout you ingest. First, don't get water near the bottom of your source of water since fallout will tend to be in that area. After you've collected the water, allow the water to sit, undisturbed, for 24 hours in its container so that fallout particles will settle to the bottom. When you use the water, disturb it as little as possible and carefully and slowly pour the water from the container. Leave the last of the liquid (with any fallout) in the container and be sure to dispose of this water and fallout particles carefully.

Again, be sure to sterilize the water after filtering it since dangerous organisms may be in it.

Stored water and the chemicals used to treat water both can taste pretty awful. Therefore, you'd be wise to use the "trick" used by many GIs and troops around the world: put instant tea, kool-aid, etc., into your water to "camouflage" its bad taste.

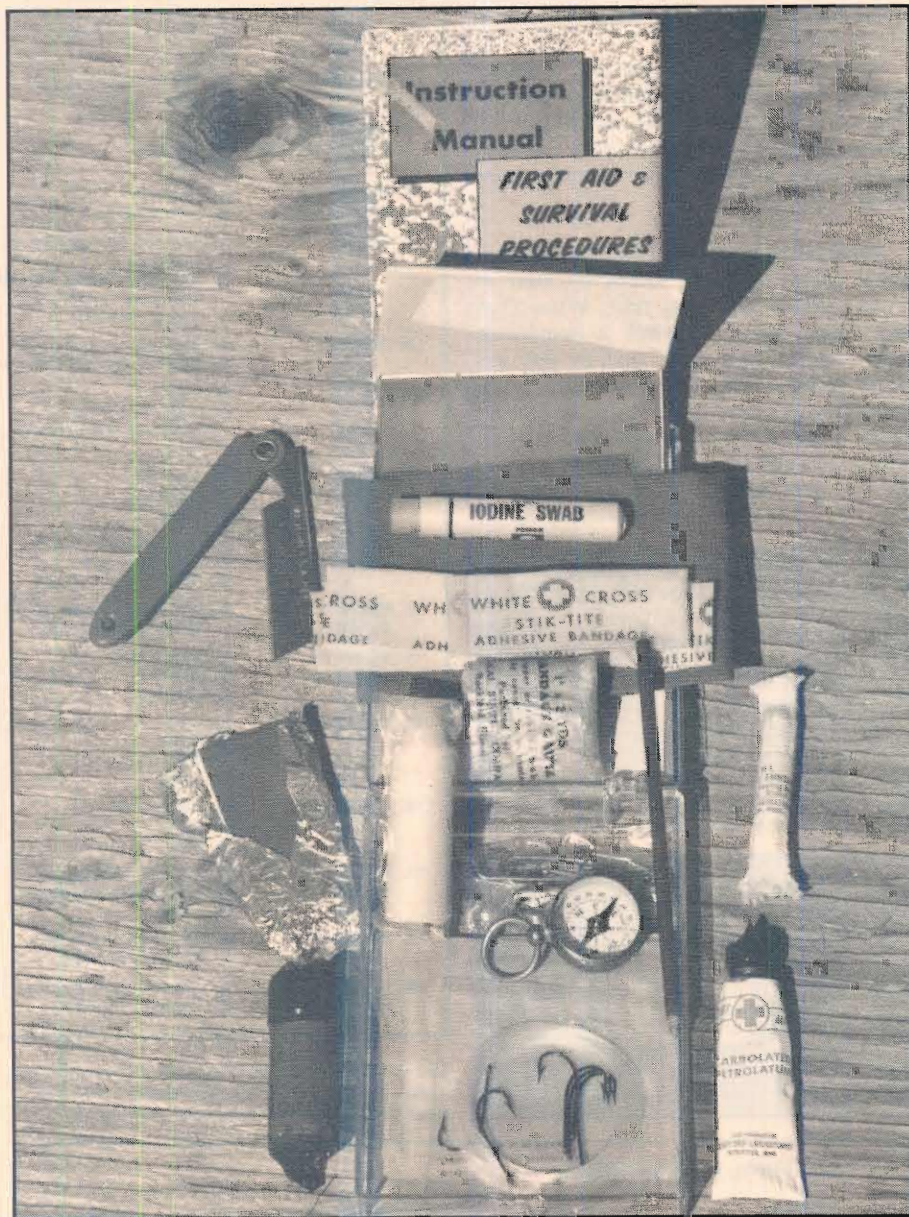
Normally, water won't be hard to come by following a nuclear war or other major disaster and it's nearly impossible for water to be contaminated to such a point that it can't be used. Provided you have a little know-how in making it safe, you'll have drinking water to use in an emergency. ●

Part I:

Survival Kits

Custom make your own kits tailored to your particular needs . . .

By Hal Gordon



An amazing number of survival items can be packed into one shirt pocket-size kit like this one.

(This is the first of a multi-part series of articles on strategies, planning and equipment for making up your own survival kits to serve a variety of purposes—The editors.)

THE ACTIVITY of assembling your own survival kit is one of the most intriguing projects a survivalist is likely to encounter. Besides creating an emotional warmth of security against everything from lost-in-the-woods to end-of-the-world, the

kit becomes a challenge to master your own fate. With each piece of equipment you choose, your imagination is stimulated into conjuring up real-life situations in which that item could be used. As you turn it over in your hand, you'll probably invent more than one way to use the tool in addition to its original intended purpose.

As you thumb through various survival catalogs, questions will come to mind that will lead you into fascinating research on the use of each piece of gear. This is as it should be in order to make expeditious

choices in size, weight, utility, design, quality and cost. Some of the first questions which might come to mind are: Is there such a thing as an all-around universal survival kit? Where do you draw the line between a survival kit and outfitting supplies? How big should it be? Can one kit contain everything I'll need? Is a shirt-pocket kit large enough to be practical? Will I be able to afford an adequate kit? Should the kit be stored and forgotten or be a part of my regular field equipment? Can I assemble my own kit or should I buy a commercial model? Should I pack food instead of food-gathering equipment? Where do I find survival kit supplies?

This series will answer these questions and more while leading you through the complex decisions which must be made in putting together your own survival kits.

When neighbors discover you're assembling survival kits, you may have some explaining to do. This could be the most formidable problem you'll encounter in your survival kit projects. As if to perpetuate public misunderstanding, the U.S. news media has been careful to avoid reporting anything which would encourage American citizens to stand on their own two feet and accept some responsibility for their own lives. Congress has undergone a cooling-off process toward any measures tainted with the label "civil defense." Local "peace" groups across the country are actually lobbying to stop the teaching of protective measures to young school children in defense against disasters. The reasoning behind such thought seems to say, "We can somehow prevent disasters if we would just stop talking about them." Survivalists, by definition, are having none of that.

Even certain heroes of those with such irrational philosophies have spoken out for determined individual survival. President Kennedy publicly stated, "Today we need a nation of Minute Men . . . citizens who regard the preservation of freedom as a basic purpose of their life." In a *Life* Magazine article he declared that Americans should prepare and build atomic blast and fallout shelters for survival.

Jimmy Carter, who fought public expenditures for the purpose of civil defense, said that he felt it was the responsibility of the individual to establish his own food storage and not rely on the government. As Congress votes less and less money for civil defense it puts more and more responsibility on all segments of the American public to prepare their own survival kits as protection against all possible disaster scenarios.

Those who don't have the stomach to fight for their own lives probably aren't aware that survival kits played an important role in the founding of our nation. Survival kits have played a role in human survival since the stone age when families and communities carried flint, stone knives and pouches of food wherever they traveled. Soldiers of ancient armies marched with their own blanket, fire starter, bag of water, sack of grain and

Survival Kits

pouch of dried meat—in addition to their primary weapon.

By the end of World War 2, American, British and Australian forces had developed the art of survival into a science. In the early years of that war, most of the survival information came from biologists who were not only scientists but explorers as well. To this day, survivalists are operating pretty much on the technology resulting from a war fought 40 years ago. Meaningful advances have begun only over the last few years.

After 40 years of making and using survival kits, I've come to realize that my biggest consternation is not being able to compress all my survival equipment into a pocket-size packet weighing six ounces. In order to address this problem—if not solve it—I've developed a modular program based on a plan of priority needs. This system may help guide you toward more expeditious choices in planning a truly portable survival kit and save you time and money by eliminating some trial and error or plain emotional purchases.

What might seem basic to one person may not apply to another. Let's start by seeing if we can determine what would be basic to all of us. First, I'd like to set down a premise that I believe will help put survival into perspective: "Given enough time, a naked person can be placed in an uninhabited wilderness without any tools and sooner or later that person will be able to create all the survival implements he will need to survive in style." The key to this premise is *time*. When you prepare your survival kit, you are actually buying time with each item you place into it. If we make our kit selections on the basis of the importance of time, we should be able to make a rational selection on the first item which should be included in our kit.

Here is my priority list. It should be understood that special circumstances could and should change the order in some cases.

Bleeding—Even a minor wound, if it pierces an artery, requires an immediate solution. Your aim is to stop the flow of blood—fast! You would normally accomplish this by one or more of three means: pressure over the wound, tourniquet and elevation of the affected part. A severed major artery might require immediate surgical procedure by a doctor which would indicate the need for a transmitting radio to call for help. The decision to carry a radio would be weighted by your survival strategy for the weight and size kit you could carry with you.

Except for the radio or possibly a surgical kit for the tying off of a large severed artery, you could solve the problem with no first aid kit. However, by doing so, you would expose the body to serious infection

which would be much more difficult to treat than the wound. With these thoughts in mind, you could conclude that your first need would be a sterile compress. The next consideration would be one or more antiseptics and antibiotics. Next, with proper knowledge or a good emergency surgical procedure manual, you might opt for a sterile suture kit.

After these choices, the list becomes endless but, there are a few more priority choices: complete first aid manual, tape, gauze, band-aids and some basic medical instruments. In part two we'll go into more detail.

Personal Protection—The need for personal protection from attack by man or beast could arise at any time. When that time does come, the need is immediate with even less time to act than for first aid requirements. You might want to place this category above first aid in considering what to take with you. It will depend upon where you will be traveling. Unlike many of the other dangers, this one might be

(Continued on page 64)



ABOVE — A waist pack and possible contents.



SURVIVAL KITS BREAKDOWN	
1. BLEEDING/FIRST AID:	A. Short term (12 to 36 hours) B. Long term (Over 48 hours)
2. HEALTH:	A. Medical, nutritional, personal prescriptions B. Group sanitation and personal sanitation
3. AIR:	A. Gas mask or dust mask B. Oxygen: high altitude, caves, resuscitation C. Filters for air contamination
4. WATER:	A. Arid environment B. Cold environment C. Marine environment D. Others
5. SHELTER:	A. From: cold, wind, rain, wet, heat, sun
6. SUSTAINED WARMTH/COOL:	A. Fire B. Clothing C. Fuel
7. PERSONAL PROTECTION:	A. Firearms B. Non-firearms
8. FOOD:	A. Storage: (For caching or carrying) B. Collecting: (Land, sea, air, fish, hunting, trapping, plants, insects)
9. SIGNALS:	A. Emergency rescue B. Tactical communications
10. TRAVEL:	A. Foot kit B. Aids: (Map, rope, compass, light, vehicles, etc.)
11. LIGHT:	A. Electrical B. Chemical C. Heat
12. REPAIR/ MAINTENANCE:	A. Tapes, glues B. Hardware, wire C. Tools
13. ESCAPE/ EVASION:	A. Scent killer, route maps, disguise, IDs, hiding
14. SURVIVAL MANUALS:	A. First aid B. Special C. General
15. CONTAINERS:	A. Tiny B. Small C. Medium D. Large
16. VEHICLES:	A. Spare parts B. Tools C. Fuel
17. SPECIAL TOOLS:	A. Special missions B. Occupational specialist C. Other
18. NUCLEAR THREAT:	A. Clothing: suit, mask B. Shelters: portable
19. CHEMICAL/ BIOLOGICAL:	A. Clothing: suit, mask B. Shelters: portable

LEFT — Three commercial survival kits shown here are from left, the cold weather storm kit, general survival kit and ocean fishing kit.

SURVIVAL KIT PRIORITIES

BY TIME

1. BLEEDING (FIRST AID)
2. PERSONAL PROTECTION
3. AIR
4. SHELTER; HEAT/COLD
5. WATER
6. SUSTAINED-WARMTH/COOL
7. FOOD
8. SIGNALS
9. HEALTH/SANITATION
10. ESCAPE/EVASION
11. TRAVEL
12. LIGHT
13. REPAIR/MAINTENANCE
14. SURVIVAL MANUALS
15. CONTAINERS
16. VEHICLE REPAIR KIT
17. SPECIAL TOOLS
18. NUCLEAR PROTECTION & BIOLOGICAL/CHEMICAL

BY OCCURRENCE

1. WATER
2. FOOD
3. SHELTER
4. TRAVEL
5. HEALTH/SANITATION
6. SIGNALS
7. LIGHT
8. REPAIR/MAINTENANCE
9. SUSTAINED WARMTH/COOL
10. BLEEDING (FIRST AID)
11. AIR
12. PERSONAL PROTECTION
13. SURVIVAL MANUALS
14. ESCAPE/EVASION
15. VEHICLE REPAIR KIT
16. SPECIAL TOOLS
17. CONTAINERS
18. NUCLEAR PROTECTION & BIOLOGICAL/CHEMICAL

From a Basic Food Program to a Million Dollar Underground Complex...

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The Center for Self Reliant Living

HANNA MILLS GRAINS/BEANS/LEGUMES — THE BEST FOR LONG TERM STORAGE



HANNA MILLS - producer of wholesome, safe-to-eat food. A name you can trust. We pack our own to assure the Highest Quality Available. Hanna Mills Grains come to you in specially printed, clearly labeled, food grade Poly Buckets. We even print recipes on the reverse side to help you plan your meals. All grains, beans and seeds are nitrogen packed with bay leaves added. (Historically used to inhibit bug growth.)

HANNA MILLS Year's Starter Unit™

Now Includes Soup/Stew Mix!

# Buckets	Item	Net Wt. in Lbs.
4	Wheat	180
1	Soup/Stew Mix	25
1	Yellow Corn	40
1	Green Peas (whole)	45
1	Navy Beans	45
1	Rolled Oats	25
1	White Rice (long grain)	44
1	T.V.P. (textured vegetable protein)	29
1	Milk (non-instant). Not nitrogen packed.	30
1	Raw Honey. Not nitrogen packed.	60
1	Alfalfa Seeds (for sprouting)	7

Total 14 Buckets - Total Net Wt. 530 lbs.

PLUS...FREE Bonus Pack Valued at \$16.45

Consisting of Free Cookbook and Free Lid Lifter

#SU2 Regular Price \$501.90 Frt. Collect

Now Only \$425.00 Frt. Collect

BUY TWO OR MORE ONLY \$399.00 EA. Frt. Collect

Our Hanna Mills Year's Starter Unit is much more than its name implies. It provides more protein and calories per day than 90% of the "complete" units on the market and more variety than the traditional wheat, honey and milk storage plans at a cost way below any other year's supply available. In fact, you can buy two Hanna Mills Year's Starter Units for less than most one year units! All nitrogen packed.

Carefully designed by our nutritional consultants to provide approximately 2,040 calories and over 85 grams of protein per day for one adult for one year or two adults for 6 months.

WHEAT SALE!

Nitrogen packed for long storage with bay leaves added to help inhibit bug growth. Hanna Mills brand hard red winter wheat.

45 lbs. net per bucket

1 - 9 buckets	\$16.50 each
10 - 19 buckets	\$15.25 each
20 - 99 buckets	\$14.40 each
100 or more	\$13.90 each

Freight Collect

GRAINS, BEANS, SEEDS

	WEIGHT	SALE PRICE
005 Barley, pearled	45#	22.45
010 Black Beans	43#	35.80
015 Blackeye Peas	42#	34.60
020 Buckwheat	40#	49.05
025 Corn, yellow	40#	19.60
030 Garbanzo Beans	45#	53.10
035 Great Northern Beans	45#	35.80
045 Green Peas, split	45#	25.10
040 Green Peas, whole	45#	25.00
050 Kidney Beans	41#	38.25
055 Lentils	43#	49.75
060 Lima Beans, baby	43#	33.75
065 Milk, powdered*	30#	65.90
070 Millet	43#	33.50
075 Navy Beans, small white	45#	43.40
080 Oat Groats, whole kernel	40#	27.80
085 Oats, rolled (old fashioned)	25#	20.25
087 Pinto Beans	41#	26.55
095 Popcorn	45#	27.45
100 Rice, brown, long grain	43#	29.65
105 Rice, white, long grain	44#	29.65
110 Rye	42#	22.10
115 Salt*	47#	24.60
120 Soybeans	40#	33.30
125 Textured Vegetable Protein (TVP), unflly, natural	21#	30.40
130 Triticale	39#	19.70
135 Wheat, winter	45#	17.90
150 SOUP/STEW MIX	25#	28.60
155 EZEKIEL BREAD MIX (9/8-day supplies) + book	21#	33.10
160 SUSIE'S PANCAKE MIX (recipe included)	43#	26.95
165 SPIRULINA - in airtight 1 gal. pail	5#	155.00
170 Lid Lifter	2#	8.50
175 Soap, concentrated, bio-degradable, phosphate free; 1/3 cup per load*	47#	31.50

EMPTY POLY BUCKETS

P406	6-gallon buckets w/lids	Set of 5	29.00
P405	5-gallon buckets w/lids	Set of 6	29.00
P403	3 1/2-gallon buckets w/lids	Set of 5	19.75
P402	2-gallon buckets w/lids	Set of 10	37.85
P401	1-gallon buckets w/lids	Set of 10	28.60
PW408	5-gallon water containers w/pour spout lids	Set of 3	16.50

SPROUT SEED IN 1-GALLON NITROGEN PACKED POLY BUCKETS

600	Alfalfa	7#	38.15
605	Lentils	7#	15.90
610	Mung	7#	22.45
620	Red Clover	7#	33.95

*NOT NITROGEN PACKED

Freight Collect

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HELP!!! Our bees over produced and we have honey *everywhere*. Get yours while this fantastic price holds.

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5 gal. (60#)

#145 Regular Price \$78.50 Frt. Collect

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One of the biggest personal problems we face today in the event of an emergency is that most of us do not have the necessary supplies and skills to take care of ourselves and our families. Chernobyl is a perfect example of what can happen. How many of us have radiation detectors, emergency kits and a safe place to go if that happens here? Many of us are near by or down wind from one of the 98 active Nuclear Power Plants in the U.S. By not knowing about radiation, half life, etc. we have in effect become Techno-Peasants. We have become Technologically/Survival Illiterates. We must educate ourselves continually and practice not only basic survival skills, but learn how the new technology is affecting us (take a basic computer course). Read many of the fine books we carry and use this excellent magazine. Starting a local support/discussion group should accelerate your learning.

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Better Read Than Dead T.F. Nieman\$15.50*
Includes maps of high risk areas. Do-it-yourself shelters.

Nuclear War Survival Skills Keramy\$11.25*
Must reading on nuclear survival. Covers all nuclear survival skills.

Where There Is No Doctor Werner\$11.50*
Written for workers in remote villages. Excellent for emergency situations.

Emergency War Surgery\$15.95*
Covers NATO standards for initial care of war wounded. Nuclear section. This book standard in our survival medical kit.

Disaster Preparedness\$14.95*
Written for average American family. Covers the how and why. Plus preplanning and stocking up.

*All books PPD 48 states

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STOP thyroid damage from radiation.
Full details page 96 "Nuclear War Survival Skills."
New supply -- order while still available.

100 Tablets ... \$24.50

PPD 48 states

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SURVIVAL SHELTER™



Item	Price
NS1 Hand Crank Ventilator\$265.00 Up to 200 C.F.M.; 1/2 static pressure 4" diameter slip type inlet connection	
NS3 Filter Holder and Housing*450.00 Includes 1 Z Mat and 1 HEPA filter in metal air tight casing 14"x14"x30", 4" inlet connection, 3" outlet connection	
SSB Survival Shelter - pictures and drawings of a custom underground shelter. Ppd.2.00	
NS9 Radiation Detector179.00 Portable, hand-held. Measures 3 ranges - 0.5, 5 50 MR/HR Detects Alpha, Beta, Gamma and X-rays. Runs on one 9V battery up to 2000 hours	
NS11 Nuke Suit95.00 Emergency personal anticontamination kit. Nuclear Anticontamination; Chemical Spills; Agri Pesticide Releases; Lab Accidents; etc. Provides full body and respiratory protection. Easy to put on; Lightweight; Fully tested; Sizes S, M, L, XL; New	
NS13 Gas Mask39.95 Current issue Israeli Army	
NS15 Hand Crank Ventilator (heavy duty).475.00 2 - 3" static pressure, 130 CFM. For use with filter housing and filters. Not for use with motor. Use with NS3.	
NS17 Electric Motor Driven Ventilator650.00 With hand crank, mounted on board. 115V, single phase 1/8 H.P. 2 - 3" static pressure, 130 CFM heavy duty, (not same as NS15) special extended shaft and oil less bronze bearings. Comes with pulley, belt, 4 ft. cord and switch. For use with NS3.	
N 25 Flexible Hose, 3",40.00 10 ft., to connect ventilator(NS15 and NS17) to filter housing ((NS3)	
NS30 Hand Operated System875.00 Includes one NS 15 Hand Crank one NS3 Filter Holder, housing and filters, one NS25 Flexible Hook-up Hose	
NS35 Electric Operated System1040.00 Includes one NS17 (mounted on board), one NS3, one NS25.	

Additional equipment listed in survival shelter brochure.

*Must be used with NS 15 or 17.

Prices and availability subject to change without notice.

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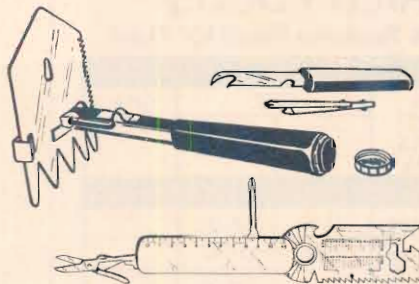
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Survival Shovel. Lightweight, sturdy multiple use tool. Two position head for use as shovel, hatchet, hammer, rake, saw, wrench, mattock and nail remover. Bottle opener, slicing knife, can opener, can piercer, fish scaler, phillips screwdriver and regular screwdriver stored in handle. Constructed of stainless steel and high-impact plastic. Includes carrying case with belt loops. Weighs less than 1-1/2 lbs.

Regular \$23.95 + \$2.00 S&H

SALE \$19.95

PPD 48 states

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15 Function Survival Tool. Hardened stainless steel blade with high-impact ABS plastic body. Compact size - 5"x1-3/4"x1/2", assembles to 9-1/2" long. Contains: Chisel, Wrench(3 sizes), Saw, Wire Stripper, Can Opener, Knife, Morse Code, Bottle Opener, Protractor, Heliograph, Magnifying glass, Scissors, Ruler, Phillips Screwdriver, Compass, Belt Sheath included.

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High Quality...
High Impact

**18 GAL.
PLASTIC
BARRELS**

As Low As \$14.99
Each Delivered

Storage for • Grains
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Made of 1/8" high impact plastic. 10" screw on lid with air tight seal. 23" high by 16" diameter neoprene gasket. Two heavy duty handles. Food grade - used once for mushrooms



One Barrel \$19.95

Plus \$4.50 S&H

**5 Barrels
\$105.00***

**10 Barrels
\$179.00***

**20 Barrels
\$335.00***

**100 Barrels
\$1499.00***

*PPD 48 states

ULTRALIGHT

20 Hour Oil Lantern. Burns clean and bright. Lights easily, packs small, travels light. Lantern measures 2-1/2"x4" when closed, and stands just 5-1/2" when open. Weighs only 8 oz. when filled. Lantern burns for about 20 hours on one fill-up. Uses K-1 kerosene or any high-grade, smokeless lamp oil. Constructed of stainless steel, aluminum and nickel-chrome plated metals for corrosion resistance and trouble free service.



Reg. \$4.95 + \$2.50 S&H

SALE PRICE \$23.50

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2 or more \$22.00 each PPD 48 states

Israeli Current Issue

MILITARY GAS MASK

Straw port for drinking without removing mask. Filter canister for all standard gases. Comparable to US Army current issue at almost half the price



ONLY \$39.95

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Start a Fire
With One Hand
SPARK-LITE

The new Spak-Lite is the smallest, most effective, waterproof fire starter on the market today. Developed for the US Army in the event only one hand was available to start a fire. It is small enough to fit inside hollow handle knives. Each set of flints will start over 1,000 fires.



Spark-Lite & Tinder \$4.95

Plus \$1.50 S&H

Extra Tinders \$1.95 Plus \$1.50 S&H

Both for \$7.95 PPD 48 states

G.I. SANDBAGS

Current issue O.D. 1'x2' woven polypropylene. Tie closure. Dozens of uses.

10 for \$13.75* 20 for \$23.00* 100 for \$92.00*

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QUIK-LOAD 223

.223 Caliber
Magazine Loader

No more sore thumbs! This easy to operate loader is uniquely engineered for most popular .223 caliber commercial and military magazines on the market.

- Designed for sport, police and military applications.
- Eliminates need for old type stripper clips and chargers.
- Slick, single movement operation.
- Loads 5, 15, 30 round magazines.
- Heavy duty steel construction.
- Black oxide finish.
- Made in U.S.A.



Reg. \$34.95 + \$3.50 S&H

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Plus \$3.50 S&H

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MILITARY EQUIPMENT COMBO USED • EXCELLENT

Military surplus is a great way to get quality equipment at a bargain basement price! All items in this combo are used, some fading, but in excellent condition, many years of use left. Combo includes: Pistol Belt, Combat Suspenders, Fanny Pack, First Aid Pouch, Canteen and Cover.



\$23.95 + \$3.23 S&H

Additional items attach to belt or suspenders:

30 round M16
ammopouch (used) **\$5.50 ea. + \$2.00S&H**
45 ammo pouch (used) **\$4.00 ea. + \$2.00S&H**
Tri-fold steel shovel (new) **\$17.75 + \$3.00 S&H**
& shovel cover (used)

Order additional items with combo and save on postage.



SLEEPING BAGS

U.S. ARMY EXTREME COLD WEATHER SLEEPING BAG. USED • EXCELLENT. This bag is rated to -40° F. Down and feather filled. Cleaned and repaired if necessary. An excellent buy.

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2 bags \$184.00 PPD 48 states

G.I. MOUNTAIN BAG. USED • EXCELLENT. Bag rated to 10° . A good medium bag. Feather filled. Cleaned and repaired is necessary.

\$39.95 PPD 48 states

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CONTENTS: 10 sterile 2nd skins, 6 air way sets, 100 alcohol preps, 10 ammonia inhalants, 100 1" band-aids, 50 butterfly band-aids, 2 elastic bandages (2 in. x 5 yds.), 2 triangular bandages, 12 stretch bandages (2 in x 180 in), 1 space blanket, 1 complete blood pressure kit, 1 Emergency War Surgery book, 6 Carlisle first-aid dressings, 1 ear drops (1/2 fl oz), 1 enema, 1 eye care solution, 10 sterile eye pads, 2 sterile eye washes, 1 penlite flashlight, 10 sterile gloves, 1 tube lubricating jelly, 6 surgical masks, 10 tinctures methicillin, 1 zinc oxide ointment, 1 burn ointment, 1 povidone-iodine ointment, 1 triple antibiotic ointment, 1 poison antidote kit, 2 poison ivy (oak) creams, 100 povidone-iodine prep pads, 100 Q-tips, 5 ea. #11, #15, and #10 stainless steel scalpel blades, 1 #3 reusable stainless steel scalpel handle, 10 #10 sterile disposable scalpels, 1 heavy-duty para-med scissors, 1 shave prep kit, 1 spray can skin treeze, 1 snake bite kit, 6 sets of air splints, 50 post-op 4x4 sterile sponges, 10 insect bite sting ease swabs, 1 10 item minor surgery kit in removable folding case, 12 2/0 sutures & needles, 12 3/0 sutures & needles, 1 suture removal kit, 2 waterproof adhesive tapes (1" x 180" roll), 4 waterproof adhesive tapes (1/2" x 180" roll), 20 2x3 telfa sterile pads, 1 oral thermometer, 30 wood tongue depressors, 50 water purifier tablets, 12 willowprun (white willow bark extract)

Regular \$575.00 + \$15.00 S&H

A.S.G. SPECIAL \$475.00 PPD 48 states
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MINOR SURGERY KIT

Just the right instruments to handle those minor medical needs. Highest quality. Light weight. Easy to pack. **CONTENTS:** Straight Hemostat, Curved Hemostat, Scalpel & Blade, Scissors, Light, Probe, Tweezers, Alcohol Pads. All in carrying pouch.

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KATADYN POCKET FILTER

KEY POINT: The Katadyn Pocket Filter is the only really professional portable water purifier on the market today. Designed for heavy duty, extended use under the roughest conditions that often exist in field situations, where all kinds of raw water supplies will be encountered, where the purifier must produce large amounts of safe water quickly over long periods of time and where equipment failures and vague promises about "filter capacity" or "filter life" can't be tolerated. **SIZE:** Compact - about the size of a two-cell flashlight. **WEIGHT:** Only 23 ozs. **LIFE:** Many years - clean by brushing off. **EPA REGISTRATION:** Yes. #39444-1.

Pocket Filter comes with a 20" suction hose fitted with an intake strainer to eliminate coarse debris, cleaning brush and instructions, all in a zippered soft carrying case.

#PF100 Regular Price \$170.00 Ea. + \$3.00 UPS



NOW ONLY

\$149.00

PPD 48 states



FREEZE DRIED FOODS

Delicious Flavor, Easy to Prepare & Remains Fresh for Years...

FOOD IN NO. 10 CANS

TOTAL QUAN.	PRODUCT DESCRIPTION	APPROX. RECONST. SERVINGS PER/CAN	PRICE		TOTAL COST
			CAN	CASE	
MAIN COURSE ENTREES					
	Beef & Rice w/Onions	20 - ½ cup	21.00	126.00	
	Beef Stew	18 - ½ cup	22.90	137.40	
	Chicken Stew	21 - ½ cup	21.50	129.00	
	Chili Mac w/Beef	20 - ½ cup	16.42	98.52	
	Noodles & Chicken	16 - ½ cup	15.50	93.00	
	Noodles & Strog. Sauce with Beef	16 - ½ cup	12.90	77.40	
	Spaghetti w/Meat & Sauce	19 - ½ cup	15.50	93.00	

VEGETABLES

	Corn	20 - 1/2 cup	15.95	95.70	
	Green Peas	22 - 1/2 cup	15.95	95.70	

FRUITS

	Apples	14 - 1/2 cup	21.90	131.40	
	Peaches	12 - 1/2 cup	21.90	131.40	
	Strawberries	8 - 1/2 cup	21.90	131.40	
	Fruit Nuggets	16 - 1/2 cup	10.00	60.00	

BREAKFAST COURSES

	Eggs w/Butter	27 - 2 eggs	25.50	153.00	
	Cheese Omelette	24 - 2 egg	33.75	202.50	
	Granola* with Milk* & Blueberries	22 - 1/2 cup	27.40	164.40	
	Hash Brown Potatoes*	28 - 1/2 cup	10.50	63.00	

SNACKS AND BEVERAGES

	Nut Chocolate LURPS® cashews*, chocolates*, peanuts*, freeze dried raisins	45-1/4 cup (dry)	32.00	192.00	
	MT. HOUSE Crackers*	Approx. 70	9.45	56.70	
	Butterscotch Pudding	91 - 1/2 cup	15.00	90.00	
	Chocolate Pudding	80 - 1/2 cup	15.00	90.00	
	Banana Cream Pudding	91 - 1/2 cup	15.00	90.00	
	Cheddar Cheese Spread	5.8 lbs.	30.75	184.50	
	Orange Drink	105 - 8 fl. oz.	13.75	82.50	

Here's how to order your Mountain House Freeze Dried Foods...

Please order in multiples of six. There are six No. 10 cans per case. You may mix a variety of different foods in a case, just order in multiples of six. A good example: 3 entrees, 1 fruit, 1 vegetable, 1 breakfast, (six items total).

TRY MOUNTAIN HOUSE'S FREEZE DRIED FOODS SAMPLE PACK

Assorted freeze dried foods in foil pouches, designed for trial and other specialized uses. It's the same food as that in the No. 10 cans intended for long-storage.

\$29.95
Freight Paid



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Fabian Brothers:

DTA MIL/BRAKE

State-of-the-art weapon control devices . . .

By Bob Clark



Advantages are very apparent from these two dramatic shots of an M16 firing full auto with and without the DTA MIL/BRAKE. In the photo on top, drastic barrel climb is realized after only three shots. This climb and subsequent loss of target alignment is realized with firm grip and standard flash suppressor. In the photo at bottom, the same rifle fitted with a DTA MIL/BRAKE shows almost no climb or recoil after a five-shot, burst with less than adequate grip. These before and after photos were taken within minutes of each other, same weapon, same ammo, same shooter, different brake!

IT ISN'T OFTEN that I will make statements declaring that a certain product is the very best or unequaled. Such statements open the door to all sorts of controversy and at best end up being a personal judgment call just waiting to be riddled by Mr. Knowitall. However, there are times when the only logical assumption, after thorough evaluation, is that a particular product is the best of its kind. Such is the case with the DTA MIL/BRAKE.

The DTA MIL/BRAKE is a state-of-the-art muzzle control accessory which quite literally outperforms anything of its

type on the market today.

Utilizing computer designed porting, spent gases are used to counteract recoil and muzzle climb. In laboratory controlled tests this amounted to a 44 percent reduction in recoil travel for 5.56 rifles and 32 percent for 7.62 weapons. Similar reductions in muzzle climb and sideswing were also measured. The advantages should be obvious.

Most notable of the many advantages are: quick target realignment when confronting multiple targets, multiple hits on same target when firing full auto, suppression of muzzle flash, and overall

superior weapon control.

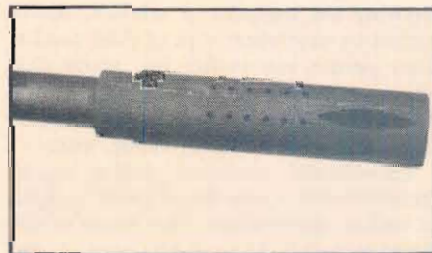
The DTA MIL/BRAKE is currently produced for most popular assault-type rifles and can be custom made for application to any modern weapon. Fabian has even fitted the BRAKE to revolvers. Some applications require barrel threading. For such weapons as the Mini-14, Fabian Bros. offers a low cost barrel threading service. In most cases the service runs \$15 per barrel plus \$5 handling.

All MIL/BRAKES, with the exception of those for the Mini-14, are mil spec parkerized. The Mini-14 units come with semi-gloss blue finish or natural 303 stainless.

Most popular MIL/BRAKE models sell for \$29.95. Exceptions to this price are the stainless Mini-14 which retails for \$34.95 and the M-14 and M1-A which sell for \$59.95. Custom applications will be quoted on request. Regardless of price, the installation of a DTA MIL/BRAKE will, quite possibly, be the most beneficial modification you will ever make to your weapon. For further information contact Fabian Bros. Sporting Goods, Inc., Dept. ASG, 3333 Midway Drive, Suite 104, San Diego, CA 92110; or phone (619) 223-3955. ●



The DTA MIL/BRAKE comes complete with instructions, set screw, allen wrench and lead shot to protect threads from set screw. This particular photo compares the DTA, top, with standard FN FAL suppressor.



Computer designed ports can be positioned at any angle depending on needs. Standard location, shown here, directs gases to negate climb and swing.

Types, Uses:

Canoes



If you choose the right canoe, you can experience freedom and pleasure seldom found in the outdoors . . .

By Bud Lang

WHEN IT COMES to traveling on water and maintaining a sense of mobility, nothing beats a canoe. If you haven't tried canoeing, you don't know what you're missing. Canoes will take you places that are impossible with other boats, and where necessary you can even portage around rapids, falls or unnavigable streams to the next body of water. Not only can you navigate most lakes, rivers and even swamps in this great country via canoe, but you can observe nature in the raw without disturbing it. Canoes permit you to gracefully cruise these waters, enjoying the splendor of wildlife, undisturbed by near-silent dips of your paddle. They permit you to fish just about anywhere you care to; and you can quietly troll if you desire. If it's rapids you want to shoot, you can do this by canoe, also.

Experienced canoeists realize manufacturers offer a wide line of canoe designs, as well as manufacture their wares of different materials. Even paddles come in different styles, to accommodate the needs of different canoeists. Generally these people know what type of equipment to look at



Learning to canoe is best practiced on a beautiful day, when the water is calm. Note these youngsters are wearing life vests. They're enjoying their outing in a Coleman canoe.

when they go shopping, but for the average person, who maybe tried his or her hand at canoeing during a stint in a summer camp as a kid years ago, making a decision might not be as easy. So it will be to the inexperienced this article will be addressed.

As with any endeavor, the first thing a person must decide is to what use will a canoe be put. This applies to whether you intend to rent one for a summer adventure, or invest in a canoe as you would a camper, rifle or off-road motorcycle. You certainly wouldn't buy a canoe designed for one person if your plans include carrying three people and a lot of gear on a two-week lake outing. If most of your canoeing will be on smooth lakes or streams, you also wouldn't care too much for a canoe designed for shooting rapids.

One of the best ways to get acquainted with canoe designs is to visit a large recreational center that handles a number of different types of canoes. Pick up manufacturers literature and study it, while looking at the real things close up. With a little bit of knowledge, you'll be able to ask sensible questions, and you'll also soon discover if the salespeople really know what they're talking about.

You should know that short, lightweight canoes (less than 13 feet) will generally ride lower in the water, affording you very little freeboard (that's distance from the canoe's gunwale down to the water level—gunwale is pronounced "gun-nel"). The less freeboard you have, the more chances of rough water splashing over the sides, and even swamping your boat.

Many canoeists prefer canoes around 17 feet long and with two paddlers, they can really be made to move quite swiftly. Longer canoes will naturally ride higher out of the water than a short canoe loaded with the same weight, thus offer much more capacity.

Along with length, one must show some concern for a craft's beam, that is the width of the craft at its widest point. The degree of fullness fore and aft of the beam is also important. If the canoe is pointed

and quite narrow, it might travel a lot faster, but that benefit comes at the expense of stability.

Hull design is also important. Take a look at the bottom of a number of canoes and you might find one with a relatively flat bottom. Another may have a rounded bottom, while a third may feature a deep arch. Some canoes may even have a small keel. These designs are utilized in canoes of differing styles, such as for fishing or white water racing. One of the first things new canoeists discover is that any canoe is less stable, let's say, than a row boat when it comes to boarding, standing in it, and leaving. Because they are so narrow and due to the somewhat rounded hull, they're much easier to capsize. If you buy a canoe for the use you intend to put it, and exercise safety, chances of your going in the drink are lessened.

All of the hull features we've been talking about—length, beam, hull shape, keel—play a part in how any canoe handles. What you have to do is select the right one for you. If you intend to buy a canoe, it might be best to rent one, or two, first and try them out. Then go for the big investment.

Construction Materials—Canoes are currently available made of a number of different materials. A few canoes are still made of wood, but they are relatively scarce. That these canoes cost quite a bit, are much heavier, and require some upkeep hasn't made them too popular. The most popular material in use today is fiberglass. It offers a light weight, attractiveness, a wide variety of colors, reasonable price and ease of maintenance. Relative to fiberglass, there are two different methods employed in making fiberglass products, and we should spend a few moments discussing them.

Advertisements, and writers, may speak of "hand lay-ups" and "chopper gun" products, but this can leave the reader confused. Here's what these terms mean.

(Continued on page 46)



These lake fishers (persons) are fishing from a fiberglass Mad River Canoe, trimmed in Vermont ash. Where canoeists stay low, these craft are very stable.

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Canoes

(Continued from page 45)

A waxed mold is sprayed with a colored gel coat, which will be the color of the eventual product, be it a canoe or auto body. When cured, the gel coat is painted with a layer of resin and large sheets of fiberglass matte are laid in place. Another coat of resin is brushed onto the matte, and a squeegee is used to move the resin about and make sure it impregnates every strand of fiberglass material. The squeegee also removes excess resin from the material and compacts it. Too much resin leaves a weak product. Fiberglass matte comes in different "weights," or thicknesses (it's noted in terms like, four-ounce matte, six-ounce matte, etc.). One, two or even three layers can be applied. The more layers used, and the heavier the material, the thicker, heavier and generally stronger will be the product. Finally, a layer of fiberglass "cloth" is applied to the inside of the canoe. Cloth is a woven material, offering superior strength because the fibers are all very long, and are tightly woven. Matte, on the other hand, offers bulk but the fibers are all very short, running in different directions. Cloth leaves the inside of a canoe very smooth. The product we now have is actually a fiberglass reinforced resin canoe.

Canoes manufactured with a chopper gun can be as strong as hand lay-ups described above. After the mold is gel

coated, the worker uses a special gun that sprays a resin mix at the mold. At the same time, a fiberglass "rope" is automatically fed into the chopper part of the gun, and the resultant fiber strands are blown onto the mold with the resin. The "mess" may end up being six to eight inches deep, which must be flattened by brush and squeegee. The benefit gained by using a gun (by the manufacturer) is it's easy to get into tight corners and such and time is not wasted cutting out panels of matte from patterns. Here's the bad part about chopper jobs. When the chopped fibers are being squeegeed, they slip and slide all over, and it's difficult to maintain an even thickness throughout. Just as with hand lay-ups, extra reinforcement can be built in by spraying in more glass instead of laying in reinforcing strips. Some builders employ a layer of fiberglass roving (a very thick "blanket" of fiberglass matte) on the inside of gun jobs to reinforce them and provide bulk. The inside finish of these jobs is very rough as compared to cloth. Any fiberglass job will be strong if it's reasonably thick enough. If you can depress a flat panel with finger pressure, and it gives easily, I'd beware. It should flex very little, otherwise it's pretty flimsy.

One firm we're aware of does not use fiberglass matte in the construction of its "glass" canoes. They use a special weave

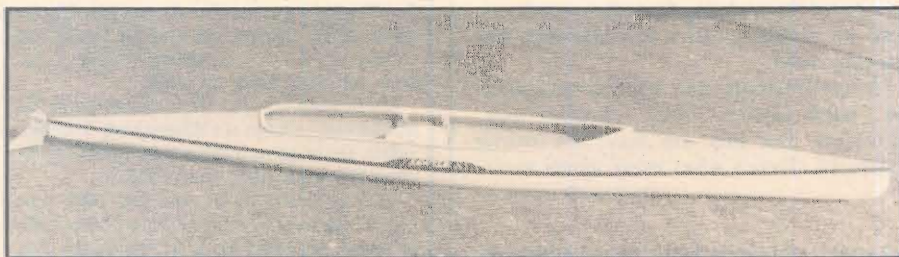
cloth, in multiple layers, laid out at specific angles, to provide the entire body skin. This does away with excessive use of resin which offers no strength in itself.

Uniroyal "Royalex," or ABS (acrylonitrile-butadiene-styrene) plastic, has also been used in the manufacturing of canoes. It has also been used to manufacture auto bodies and other large scale products. This material is unique in that if dented, it will "snap back" into its original shape. Royalex is combined with a tough vinyl skin and foam inner layers to provide stiffness and floatation properties. These canoes aren't cheap, but they are fairly popular.

DuPont Kevlar 49 aramid is a high strength organic fiber material which pound for pound is five times stronger than steel. In fact, one type of Kevlar is utilized to make soft body armor for law enforcement and military personnel. It is also used to manufacture canoes, being reinforced with special resins and coated with an abrasive resistant gel coat. These canoes are also reinforced at areas subject to impact. Kevlar canoes are super light and extra strong.

Aluminum canoes are quite popular, as they are priced within many people's budgets and are lightweight. They are quite durable and will take a lot of punishment. About the only drawback, if one can

BELOW — The "Loon" was designed by Sawyer Canoe Company to satisfy the needs of Verlen Kruger for use on an epic 26,000 mile trip around North America. It's a scaled down racing canoe somewhat like a kayak, is 17-feet long, and features a foot-controlled rudder.



ABOVE — Friends, a canoe and beautiful scenery is a combination that can provide an unforgettable day. Only in a canoe, such as this one by Coleman, can you experience such pleasure.

LEFT — This hunter was caught out on the water in a snow storm, miles from camp. Proper clothing, life jacket, and lots of skill will keep you alive in situations like this. Canoe is one of Jim Henry's Mad River models.

call it that, is the fact they don't have the aesthetic appeal of some of the other materials and they are kind of noisy in rough water. These aluminum canoes will slide easily over sand bars, they do tend to cling to rocks, whereas fiberglass and ABS canoes will slip right over them.

Whether you rent, borrow or buy a canoe, the most important thing you can do is guarantee that everyone climbing in is outfitted with a good U.S. Coast Guard approved life jacket. Do not carry more passengers than the canoe is designed for, as each model has a safe weight capacity. Finally, have an experienced canoeist teach you the fundamentals of paddling, and practice. If you can't find an instructor, visit your local Boy Scouts of America store and purchase a merit badge handbook on canoeing. It will teach you all you need to know for an outlay of around \$1. Even then, stay in calm water. Don't venture out onto large bodies of water (lakes included) even in calm weather. Winds will whip large bodies of water into huge waves in no time, and you might find yourself in "deep" trouble. The same thing applies to venturing into "white water" rivers. Stay away from them until you're confident you're an expert canoeist.

Paddles come in different styles, too, so



These white river canoeists are running the rapids in a Sawyerlex, made of Uniroyal "Royalex" laminate. It's ideal for this type of action.

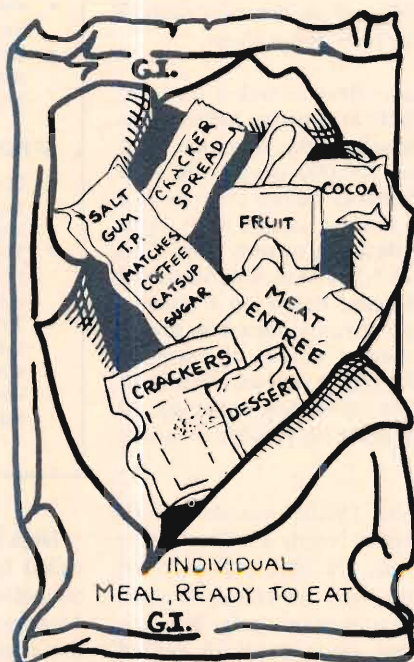
make sure you buy a pair that are right for you and your needs. While many paddles are still manufactured of wood, you'll also find them of fiberglass and aluminum. Each type has its benefits and drawbacks, so investigate before you invest.

If you're going on vacation and plan to tote that canoe along, make sure you obtain all of the information on that body

of water long before you arrive. Is the water deep? Is it full of rocks or underwater trees and brush (many man-made lakes are)? Is the water swift? Is it easy to get to the water's edge with your boat after you arrive? Answers to questions of this nature might have a bearing on how well you enjoy yourself on that first, and subsequent, outings. ●

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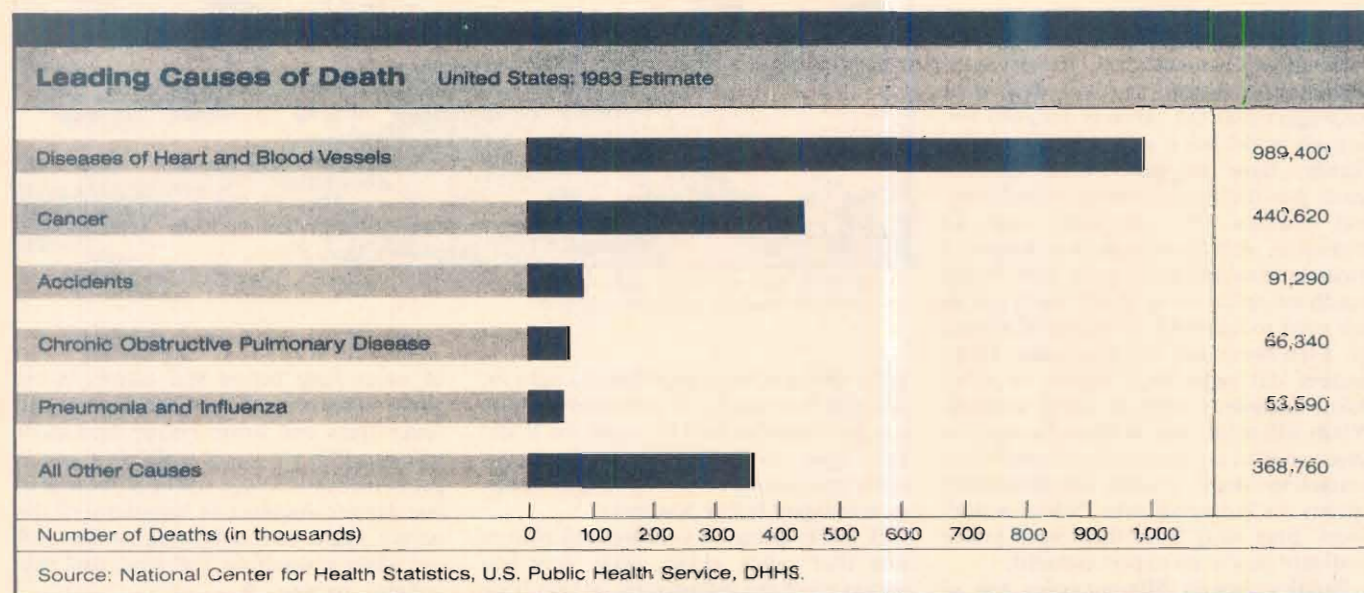
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Cardiovascular Ailments:

Heart Disease

The number 1 killer of Americans . . .

By Jim Benson



(Information and illustrations for this article were provided by the American Heart Association—The editors.)

H EART DISEASE, also known as cardiovascular disease (CVD), is the number 1 killer of Americans. About 1 million people die annually as a result of some form of heart disease. Almost as many Americans die from heart disease as die from all other causes combined.

Heart and blood vessel diseases are so pervasive they affect more than 60 million Americans—about one in every four persons is afflicted with CVD.

The single biggest cause of heart and blood vessel diseases is atherosclerosis, or "hardening of the arteries." This is a buildup of fatty deposits on the inside of the walls of the arteries. These deposits obstruct and sometimes completely block the flow of blood to the body's vital organs.

Cardiovascular disease this year will cost an estimated \$78.6 billion, including costs of doctor and nursing services, hospital and nursing home services, medicines and lost productivity.

The American Heart Association (AHA), founded in 1924 by a group of New York City cardiologists, is a non-profit organization whose purpose is to prevent CVD. Since 1947 AHA has donated more than \$572 million for research. Much as

been learned and this has paid off in a decade of declining rates of heart and blood vessel diseases. But there are still many questions unanswered and much that is not known about CVD. Much more research and study is needed. The AHA's three main areas of emphasis for preventing CVD are: control high blood pressure; stop smoking and eat foods low in cholesterol and fats.

Here is a listing of the different types of CVD and some facts about them.

Heart Attack—Heart attack is the leading cause of death in America today. Some 550,000 people will die this year from heart attacks. About 350,000 people die each year of heart attacks before they reach a hospital. The average victim waits three hours before deciding to seek help. This year as many as 1.5 million Americans will have heart attacks. Based on a famous long-term study of heart disease in people living in the Boston suburb of Framingham, Massachusetts, 5 percent of all heart attacks occur in individuals under age 40 and 45 percent occur in individuals under age 65.

Stroke—About 150,000 people will die of strokes this year. Nearly 2 million stroke victims, however, are alive today. About 500,000 people have strokes each year, based on the Framingham study. Stroke is the third largest cause of death behind heart attack and cancer.

HEART ATTACK AND STROKE WARNING SIGNALS

HEART ATTACK

- Uncomfortable pressure, fullness, squeezing or pain in the center of the chest lasting two minutes or longer.
- Pain spreading to the shoulders, neck or arms.
- Severe pain, dizziness, fainting, sweating, nausea or shortness of breath.

STROKE

- Sudden, temporary weakness or numbness of the face, arm and leg on one side of the body.
- Temporary loss of speech, or trouble speaking or understanding speech.
- Temporarily dimmed vision, or loss of vision, particularly in one eye.
- Unexplained dizziness, unsteadiness or sudden falls.

High Blood Pressure—This disease, also called hypertension, afflicts an estimated 56 million adults and 2.7 million children. Many people who have high blood pressure don't get treatment. Only a few people with this problem have it under control.

The cause of about 90 percent of high blood pressure cases isn't known, but it can be readily detected and treated.

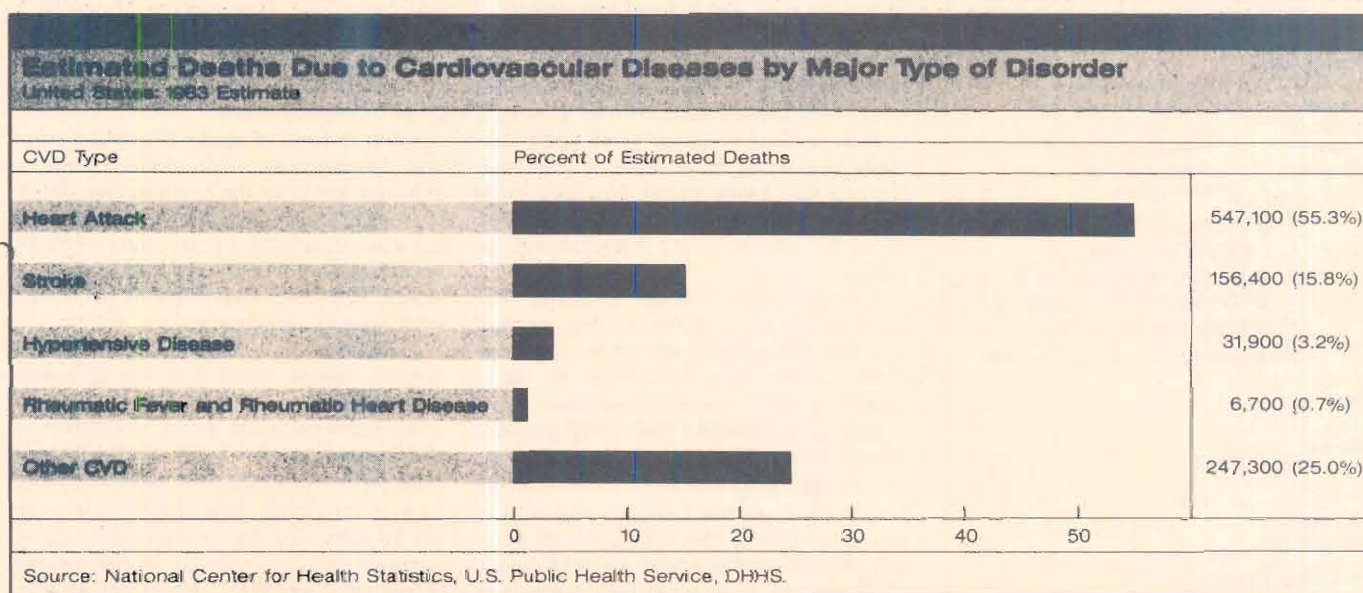
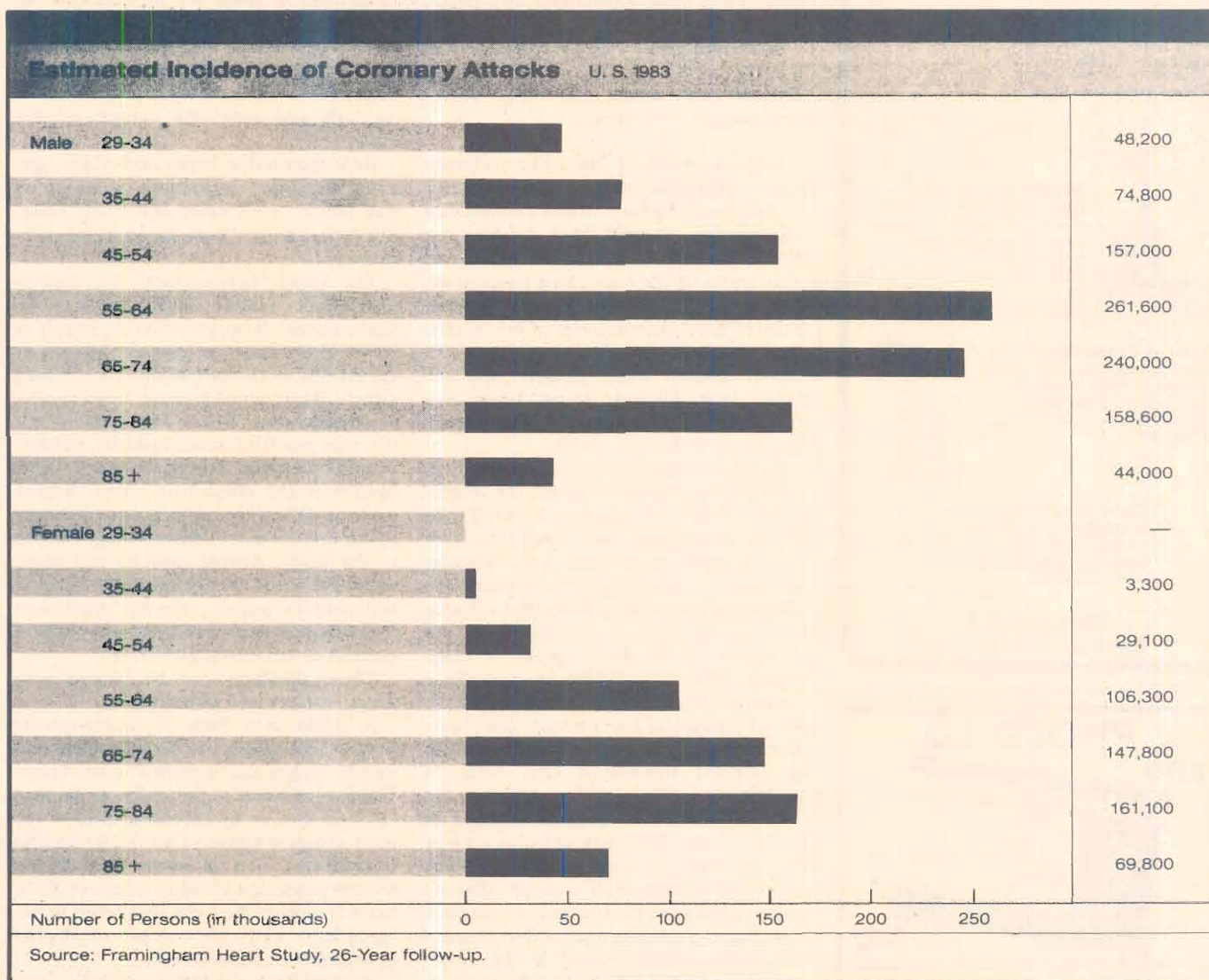
Rheumatic Heart Disease—It afflicts

nearly 2 million adults and 100,000 children. Rheumatic fever and rheumatic heart disease kill about 7,000 Americans annually. This figure is sharply lower, however, than in previous decades, thanks

to greater use of antibiotics.

Congenital Heart Defects—There are 35 recognizable types of defect. About 25,000

(Continued on page 50)



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Heart Disease

(Continued from page 49)

babies are born each year with heart defects with some 6,000 dying as a result.

Atherosclerosis—Atherosclerosis is a leading cause of the approximately 700,000 heart attack and stroke deaths each year in this country.

Atherosclerosis is the most common form of hardening of the arteries, referred to as arteriosclerosis. Atherosclerosis is a degenerative disease that narrows or blocks arteries in the heart, brain and other parts of the body. This happens as, over time, the inner walls of the arteries become lined with deposits of fat, cholesterol, fibrin (a clotting material in the blood), cellular waste products and calcium. Atherosclerosis is most often associated with middle-aged and older people, but it can strike early in life.

As the buildup of deposits on the inner walls of the arteries increases, the arteries become hard and constricted, losing their ability to expand and contract. They become narrower. It becomes much harder for blood to flow through the arteries. It's also easier for a clot to form that will clog the artery in question, shutting off the flow of blood to the heart, brain or other organs. With a complete blockage in a coronary (heart) artery, coronary thrombosis (one type of heart attack) can occur. Blockage in a vessel to the brain can result in cerebral thrombosis (one form of stroke).

Atherosclerosis is a complex disease with many causes. Scientists still don't know how to attack all these causes, but some important findings have occurred that are pointing the way. For instance, researchers have found a definite relationship between the amount of cholesterol in the bloodstream and blockage of coronary arteries. Watching your diet reduces this threat.

High blood pressure, according to new standards set by AHA, occurs when an individual has a blood pressure reading equal to or greater than 140/90. That is, a systolic reading of 140 or more and a diastolic reading of 90 or more. It has been learned that black Americans have twice as much moderate hypertension and three times as much severe hypertension as whites.

Elevated blood pressure indicates that the heart is working harder than normal and that the arteries are under a greater strain. This may contribute to heart attacks, strokes and atherosclerosis.

Mortality figures for high blood pressure are deceiving. High blood pressure damages body organs and blood vessels. Many people die from heart attacks and strokes resulting directly from high blood pressure. While scientists don't know the cause of 90 percent of hypertension cases, it is

easily treatable with drugs. The remaining 10 percent of cases are the result of an underlying problem such as a kidney ailment or a tumor in the adrenal gland. It's easy to get your blood pressure checked to determine if you have hypertension, do so regularly and avoid the dangers of this killer.

Risk factors for hypertension are age, race, hereditary inclination, smoking (a risk factor in all heart and blood vessel diseases), and oral contraceptives taken by women.

The terms "heart attack" are used to describe the sudden death of part of the heart muscle. It occurs when the supply of blood to the heart is severely reduced or cut off due to an obstruction in a coronary artery. Heart attacks result from cardiovascular disease. But a heart attack isn't the only result of cardiovascular disease. Another consequence of coronary heart disease is the chest pain called angina pectoris. When this occurs, open but narrowed arteries can't deliver enough oxygen to the heart. Angina pectoris can occur when the blood circulation to the heart is sufficient for normal needs but insufficient for increased needs such as during physical exercise or emotional excitement.

These problems can be treated with drugs, surgery and other means.

A stroke is a form of cardiovascular disease that affects the blood vessels that supply oxygen and nutrients to the brain. The flow of blood to the brain can be shut off by a clot or by bleeding. One of the most common forms of stroke is cerebral thrombosis. This is when one of the arteries supplying blood to a section of the brain is blocked by a clot that forms inside the artery. Clots often occur in arteries damaged by atherosclerosis.

Another form of stroke is called a cerebral embolism. This may be caused by a wandering clot that is carried in the bloodstream until it becomes stuck in an artery leading to the brain. Here again a clot plugs a cerebral artery.

Another form of stroke is called a cerebral hemorrhage. This occurs when a defective artery in the brain bursts, flooding the surrounding tissue with blood. This can also occur with a head injury or by an aneurysm that bursts. An aneurysm is a blood-filled pouch that balloons out from a weak spot in an artery wall.

Treatment for stroke may include surgery, drugs, acute hospital care and rehabilitation.

A congenital heart defect is a defect or abnormality in the heart that's present from birth. In most cases, scientists don't know what causes these defects, although one recognized cause is the occurrence of German measles (rubella) in the mother before she gives birth. Heart defects can

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SEPTEMBER 1986/AMERICAN SURVIVAL GUIDE 51

Diagnosis, Monitoring:

Home Medical Test Kits

Popular self tests are accurate, inexpensive, non-prescription...

By Michael Pietrantonio

MOST SURVIVAL planning, of necessity, concerns post-disaster preparedness. There are survival scenarios in which prevention is an option for the survivalist, but calamities ranging from economic collapse to natural disasters and war are not "preventable" from the viewpoint of the individual.

An individual concerned with these occurrences is forced to focus his planning on means of survival during and after the events. Should a situation arise in which prevention is a viable alternative, then such efforts of prevention are certainly the preferred course of action.

Health care professionals have long advocated prevention in preference to treatment of illness and disease. For the individual, efforts at preventing illness fall into the obvious categories—don't smoke, exercise often, watch your diet, etc. These are for the most part passive methods of prevention, basically life-style changes.

Until recently a more active effort of disease prevention has required frequent and expensive visits to professionals for specialized testing and condition monitoring. This situation, thanks in large part to new technology, has begun to change.

It is now possible for an individual to administer diagnostic and monitoring type medical tests to himself or his family in his own home. The tests are accurate, inexpensive, available without prescription, and are growing in popularity among health conscious Americans. There are home tests for conditions such as urinary tract infections, pregnancy, blood sugar levels, colorectal cancer indications and more. In addition, medical instruments once found only in the doctor's "black bag" such as stethoscopes, blood pressure monitors, pulmonary monitors, otoposcopes, etc., are readily available to help you monitor your general physical condition.

Physicians estimate that 80 to 90 percent of all health problems are currently self diagnosed and self treated by the American public. Home medical tests are seen by many physicians as a way of improving the decision making process of the individual in something that he is already doing.

Home medical testing increases your odds of early detection of problems. In many cases early detection is the key to successful treatment. Most home tests are as accurate as those done in a doctor's office or professional lab, while at the same time being much less expensive. The convenience of being able to do such testing at home, as well as the fact that the tests and results remain private, are also contributing factors to the success of home medical test kits.

In 1941 the Ames Division of Miles Laboratories introduced a relatively simple home test designed to give diabetics a reading of their urine sugar levels. The test proved useful but was limited because urine sugar levels give a delayed reading of a patient's condition. Today, Ames and other companies market blood glucose home test kits that measure the sugar levels in the bloodstream, a much more useful measurement for the patient than the urine sugar test.

While the Ames kits were the first home test kits of their kind they were aimed at a very limited segment of the consumer market. The first home test to gain widespread consumer acceptance was the Warner-Lambert Early Pregnancy Test, EPT, introduced in 1977. This kit, designed to test for a specific hormone produced during pregnancy (using a urine sample), was the first of its kind designed for a general group of users. Since its introduction, almost nine million EPT kits have been sold. Other companies soon began to produce and refine home pregnancy tests, so that today they have become the most popular home medical test done in the U.S. Almost \$40 million will be spent this year by American women for these kits.

The almost immediate and widespread acceptance of the first EPT kits alerted manufacturers to the possibilities of a lucrative market for other types of home test kits. Biomedical, genetic, and electronic advances have made possible the many types of home test kits and monitoring instruments available today. Many other types of test kits are currently under development and will soon be available to

the public. Below is a survey of some of the currently available kits, their advantages and disadvantages, prices, etc.

Home Pregnancy Test Kits—The home pregnancy test kits available today are faster, more accurate and easier to use than those introduced in the 1970s. In using the earlier kits urine was added to a test tube containing a "hormone detector" which caused the formation of a brownish ring in the test tube in the presence of the pregnancy hormone HCG. Current tests involve a total color change in a test tube solution to which urine has been added, or in another type of test immersing a chemically treated "dipstick" into a urine sample and then into another chemical solution and noting the color change of the dipstick. Current test kits are up to 98 percent accurate for a positive result but are somewhat less accurate for a negative result. This is because the HCG hormone may take some time to enter the system while the test may have been taken before the HCG was released. If a woman gets a negative pregnancy indication most manufacturers suggest waiting one week and taking the test again. If the test should read negative a second time the accuracy of the reading will be very close to that for a positive reading, about 94 percent. The tests give results in from 30 minutes to 2 hours depending on the kit used. All the kits cost in the neighborhood of \$10. Some of the most widely available kits are: EPT Plus made by Warner Lambert; Advance made by Ortho Pharmaceutical Corp; and Predictor made by Whitehall Labs.

Colorectal Cancer Test Kits—Colon cancer testing recently came into the public spotlight because of President Reagan's bout with the illness. Colon cancer is the second leading cancer killer in the U.S. It can, however, be treated successfully if discovered early.

Most of the newer colorectal screening kits use a piece of specially treated paper which one uses as normal toilet tissue. After use the treated paper is either sprayed with a solution or dropped into the

(Continued on page 62)



These are some of the many home medical testing kits available.

The Hemocult colorectal cancer screen kit test for the presence of blood in the stool.



Taking your blood pressure in your own home will often give a more accurate reading than one obtained in the doctor's office where you are less likely to be at ease.

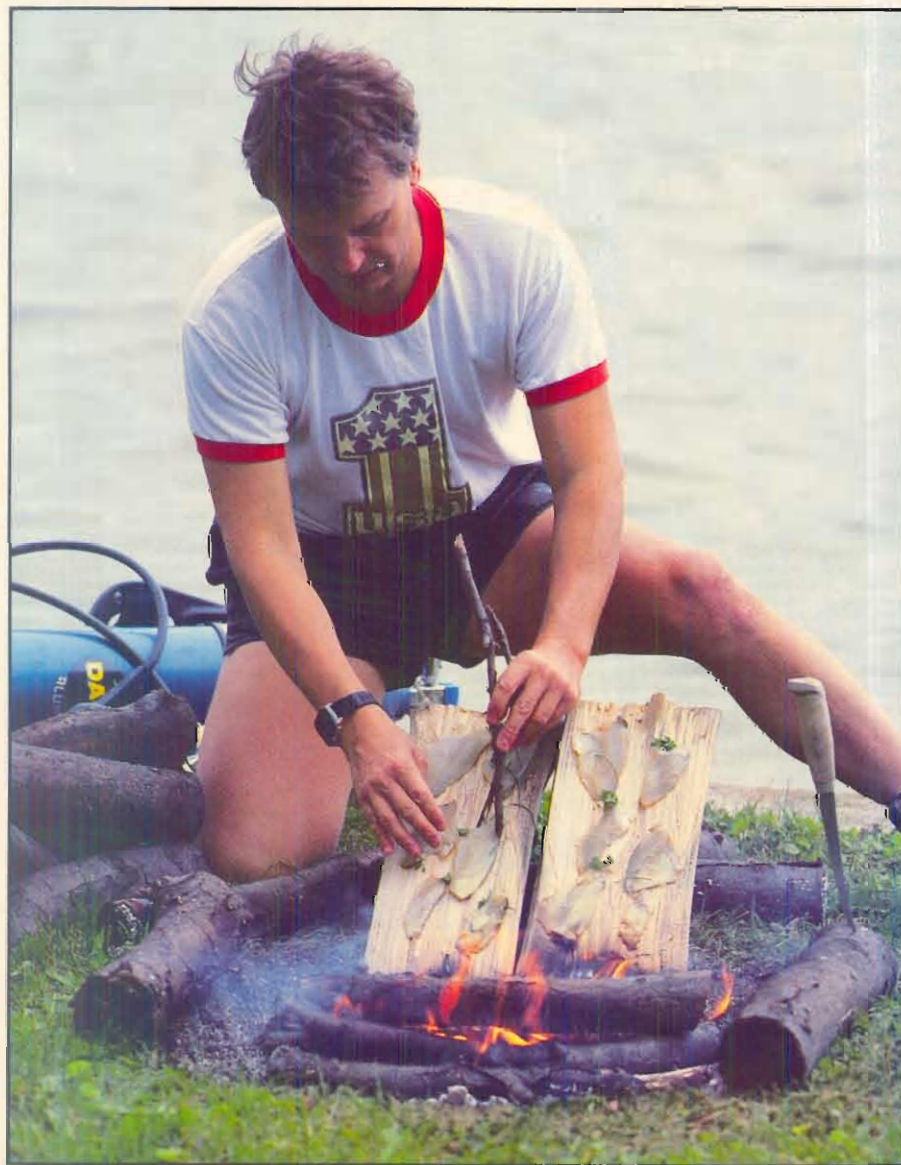


Pollution/Contamination:

Eliminating Toxins From Fish

A few food preparation techniques can eliminate much of the contamination in fish you catch and eat . . .

By Jim Meuninck and William Forgey, M.D.



The author cooks fish plank style.

large fiberglass drums were cradled over a fancy spraying machine. "I'm putting herbicide down on my beans. I suppose some of it gets washed into the pond. I'd think twice about eating any fish out of there."

"Are you telling me this fish is contaminated?" questioned Doc.

Charlie pointed to the fish. "Well, by the size of that thing it's been around a while. Maybe it was here when my Dad sprayed poison on this land . . . You know, DDT, mercury, chlordane . . . stuff like that. I've been using some new chemistry. Combination herbicide and pesticide . . . supposed to be safe. But it still kills . . . And what's left over gets washed into this pond. So if I was you, I'd give that fish a proper burial, and eat steak tonight."

Well, we ate the bass. Probably shouldn't have. But it seems when Doc and I get together there's a kind of synergism . . . What's dumb about us gets double dumb. It was the worst fish I ever tasted. I don't know if it was the pollution, or a mistake in the barbecue sauce.

As we sat there next to the campfire, forcing down the last bite, I kept thinking about all the terrible things I put into my body. I started wishing humans didn't know so much. Just take the agri-chemical business for example. Since World War II we have developed and dumped a massive bath of exotic chemistry into our wet places. These "miracle" compounds catapulted American agriculture to world prominence. Herbicides and pesticides in particular are such effective tools, that farmers now produce far more than Americans can consume. This unchained productivity has kept the American food bill the lowest worldwide. But there is a hidden cost for this horn of plenty—the birthing of a toxic wasteland.

Yes, too often, you and I are fishing contaminated water . . . possibly taking fish, clams, and other organisms that are laced with lethal toxins. What's worse, there is new evidence that herbicides and pesticides, as they trickle toward the watershed, may contaminate cattle and dairy products.

But today our concern was fish. So for some straight answers Doc Forgey and I went to see my cousin Dave Meuninck. Dave's a limnologist for the Indiana Department of Natural Resources. He

THE OTHER day Doc Forgey and I dropped a couple of worms in a farm pond near my home. Doc's strictly a cane pole guy, never used a spinning rod . . . probably never will. Some phobia I suppose, but I don't question Doc and he never makes me apologize for being weird. So, while I flipped my annelid into the far reaches of the pond, Doc dropped his bait just a few feet off shore. In this way we covered a lot of water, and it wasn't long before Doc's bamboo sjambok was bent double. A fat small mouth took one leap,

and left the pond forever.

I hefted the five-pound bass into the air to show Charlie Dudley as he approached us on his tractor. Charlie disengaged the clutch and climbed down from his Alice C. for a closer look.

"You boys ain't planning to eat that thing are you?" Charlie shouted, curling his nose up like some meat and potatoes gourmet.

"I believe we are, Charlie." I said a bit defensively.

Charlie pointed to his tractor, where two

loaded us down with research. After hitting the books and journals Doc and I came up with several ways to prepare fish so they are safe to eat . . . polluted or not. But before the good news, some more bad news.

There are few skeptics who believe all fish are safe to eat, for them, let's review the facts. Limnologists and marine scientists across the nation report an alarming rise of cancer in fresh and saltwater fish. Dr. John Black, a New York cancer researcher (Roswell Memorial Institute) has uncovered a link between river sediment and skin cancer on brown bullheads. Near Cleveland, in the Black River, 80 percent of the three-year-old bullheads have cancerous tumors. Puget Sound English sole are contaminated, about 12 percent malignant. Of the mature Atlantic tomcod swimming out of the Hudson river 80 percent may nourish cancerous liver tumors. The evidence mounts. John Harshbarger, director of Registry for Tumors in Lower Animals at the Smithsonian Institute is concerned, "because consumers have no way of knowing which waterways have contaminated fish." Biologist John Couch of the Environmental Protection Agency in Florida says, ". . . we can't put a limit on the problem." Yes, over 950 potentially dangerous substances can be found in the ecosystem. Nationwide over 11,000 contamination sites have been identified . . . the number is expected to double, according to Richard Bartel of the EPA.

Still not convinced? Perhaps like some people you think that cancer and what causes it has always been around—an inevitable background effect—and there is nothing that you can do about it. But Ron Sonstegard, a limnologist at McMaster University in Canada, did something about it. Through painstaking research, he discovered that prior to 1940 there was little or no sign of cancer in Great Lakes fish. But today almost all adult trout and salmon in the Great Lakes have traces of contamination. Carp and sucker, that plow through the bottom sediment of the Midwestern watershed are grossly contaminated. People have been warned by the Michigan Department of Natural Resources to not eat these rough fish. Thus, preliminary evidence strongly suggests this unholy phenomenon of cancerous fish is indeed manifest and contemporary.

Contaminants—The rouges gallery of contaminating chemistry includes: industrial waste water, PCBs, asbestos, mercury, lead, dioxin, arsenic, etc., etc. After fulfilling their prescribed roles they trickle down from factories and fields into our nation's lakes, streams and inter-coastal areas. They are long lived, extremely toxic in concentration. As they come to rest on the floor of the bay (lake, river or stream) they mingle with the nutrient broth that feeds plankton. Contaminated phytoplankton and zoophytes are devoured by fry and feeder fish. The

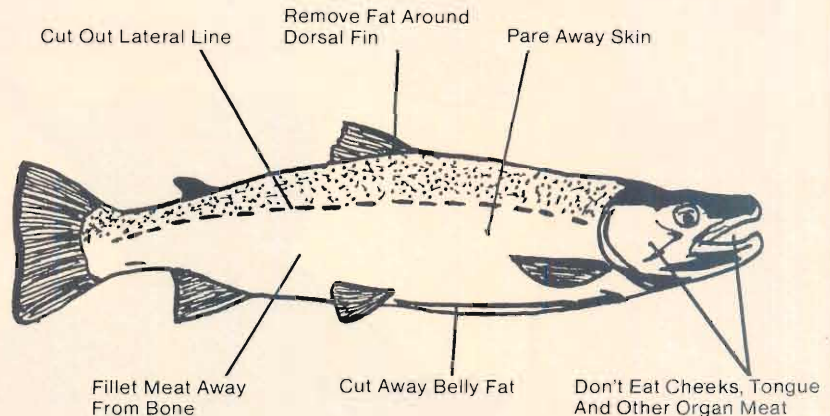


LEFT—Are these fish safe to eat?

BELOW—Great Lakes salmon are contaminated and dangerous to eat.



HOW TO PROCESS A FISH



poisons accumulate, concentrating in organ tissue, skin, lateral lines, fatty layers and flesh. Then, larger predators eat the smaller fish, the toxins are passed on—now more concentrated, more lethal. Finally, you come on the scene and catch and kill a fish. After eating the carp, sucker, flounder, sea bass . . . (name your poison), the carcinogens dead end in your organ tissue. There they begin their dirty work. Pregnant women and growing children are most vulnerable.

Our Federal government is beginning to assess what waters have reached dangerous levels of contamination. The National Marine Fisheries Service is surveying and extracting benthic (bottom) samples along coastal areas nationwide. As evidence mounts, it appears little of America's water resources remain pristine. Toxic sediments and diseased fish have been found from Florida to Minnesota, from Puget Sound to New York Harbor.

Given all this bad news, what can be done to make your catch safer to eat? There are a few food preparation techniques that can eliminate *much* of the contamination in fish you eat (or beef, chicken and game).

Be advised, fish from bottom lands and end point drainage systems (where rivers and sewers pour into the sea) are potentially most dangerous. Mountain lakes and high altitude streams are safest.

Fish may be contaminated at one of

three levels: little, moderate, or extreme. Generally speaking, the varieties of fish at each level are:

LITTLE: Smelt, panfish, grunion, mountain trout, and secondary predators under one pound in weight are safest to eat. Other oceanic species, legal targets of the hunting diver, are generally safe—if they do not feed in bays, near large coastal cities, inlets, and river mouths where contaminated wastewater spews into the ocean. Unfortunately, many divers, limited by water depth, hunt in the very areas they should avoid.

MODERATE: Flounder, gar, stripers, pike, lowland trout, salmon and inshore marine fish three pounds or less may be moderately contaminated.

EXTREME: Primary predators over three pounds, and bottom feeding fish are as a group potentially most toxic—especially if they have been feeding in extremely contaminated water.

Because most toxins are located in the oil, fat and organ tissue of fish, a few filleting and cooking techniques eliminate *most* of the danger. What follows is a preparation ritual that makes your catch safer to eat.

Filleting—First, do not eat any organ meat, tongues or cheeks of fish. Second, gut the fish, and cut away all belly fat. Third, fillet the fish, remove the skin, cut

(Continued on page 67)



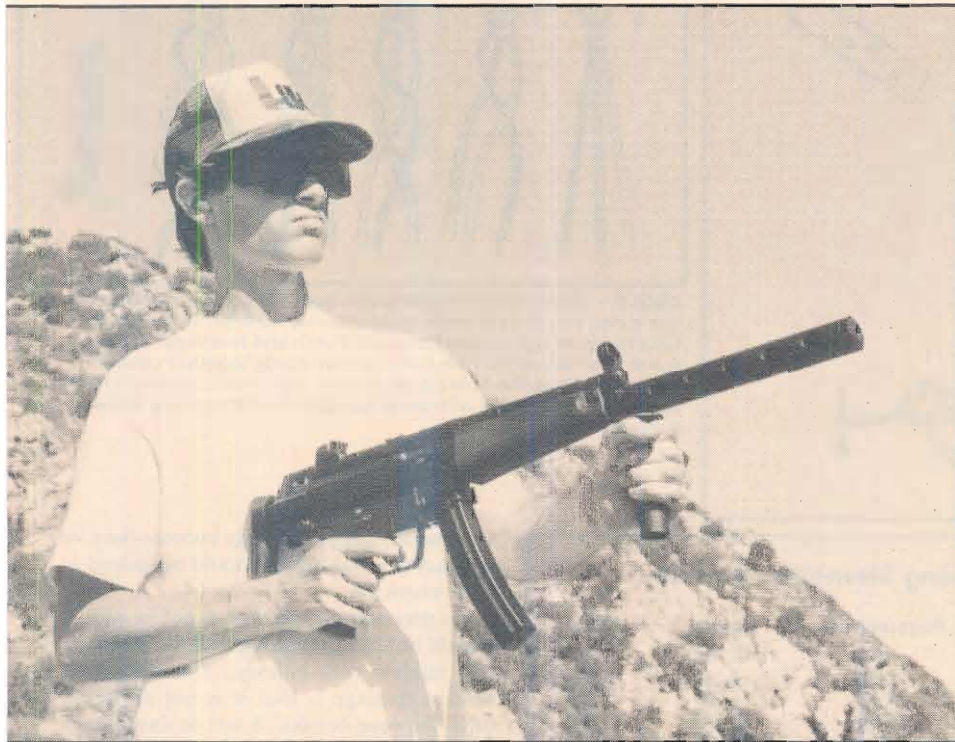
AMERICAN
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GUIDE

Carbine Firepower:

H&K 94s

Semiauto spinoffs of the military submachine gun . . .

By Bob Clark



OVER the last decade civilian interest in predominantly military type sub-machine guns has dramatically increased. Unfortunately numerous gun control acts have made ownership of such weapons about as easy as wrestling a grease covered alligator.

Set these legal limitations on a collision course with consumer demand and you're bound to create a substantial void. Fortunately for those interested in the sub-machine gun pistol-caliber carbines, several manufacturers have developed semiauto spinoffs of their military hardware which comply with edicts set down for civilian ownership.

Most notable of these are the UZI, Sterling MKVI and H&K 94. Each and all of these well designed pieces do help to fill stated void.

However, at this time we will concern ourselves with H&K's two offerings shown on this month's cover along with the H&K P7M13 pistol.

Introduced mid-way through 1983, the H&K 94 is without a doubt one of the

finest weapons of its type in the world today. Aimed directly at the market mentioned above, the H&K 94 is, with few exceptions, a semiauto look alike of the MP5 submachine gun developed in 1966. These few exceptions amount to a 16.54 inch barrel compared with the MP5's 8.85-inch, pushbutton magazine release instead of the flapper type and two position select lever, "0" safe and "1" fire. While the pushbutton release prevents installation of full-auto trigger housing group other internal modifications make conversion of the 94 to full auto difficult and potentially dangerous. Not only does the trigger mechanism of the 94 lack an auto sear but the bolt carrier has been milled to prevent engagement of such a sear.

H&K 94 models are available in two styles—fixed stock and retractable stock. The fixed stock version measures 34.59 inches overall. With retractable stock measurements are 34.05 inches and 27.58 inches. The retractable model is slightly heavier than the fixed version weighing

7.18 pounds compared to 6.43 pounds. Standard H&K finish of matte black, baked enamel is utilized.

Our 94s came with both the standard 15- and optional 30-round magazines. Both magazines are steel and extremely well made. A pair of side tabs hold the floor plate securely in place but make disassembly a bit of a chore. H&K's load/unloader makes magazine loading quick and simple.

The 94 models will accept mounting assemblies designed to fit the standard H&K clamp mount. The H&K scope mount with rings, part number 700039, is not the least expensive mount on the market but it is certainly the best for this application and its quality matches that expected from H&K.

Current model 94s come standard with a convenient and functional barrel shroud and assault grip. The shroud slips over the barrel and is secured by tightening the grip in place as shown in the photos. A shroud, grip and 15-round magazine are the only standard accessories at this time.

The semiauto 94A2 fixed and 94A3 retractable fire from the closed bolt position as compared with the full-auto MP5 which fires from an open bolt. This closed bolt design promotes superior accuracy in most weapons and so was the case with the 94. This high degree of accuracy, ability to digest a wide variety of ammunition, superior design, quality workmanship and proven reliability make the H&K 94 well worth consideration by anyone looking for a state of the art, light weight, 9mm semiauto carbine/rifle. ●

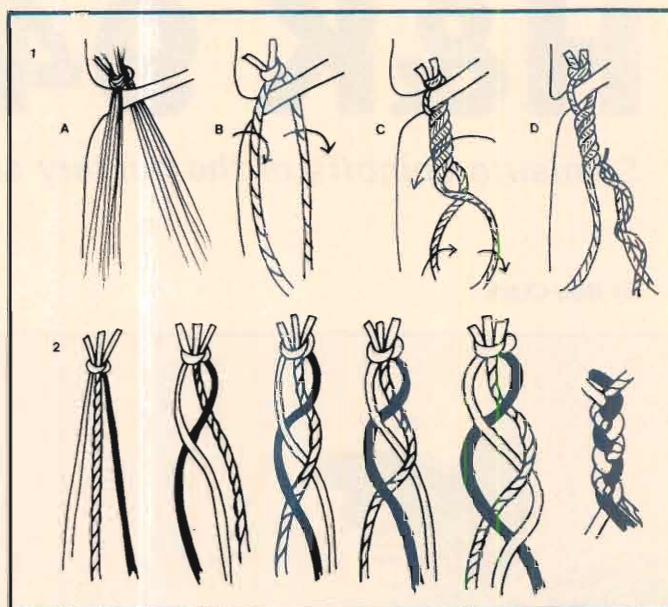
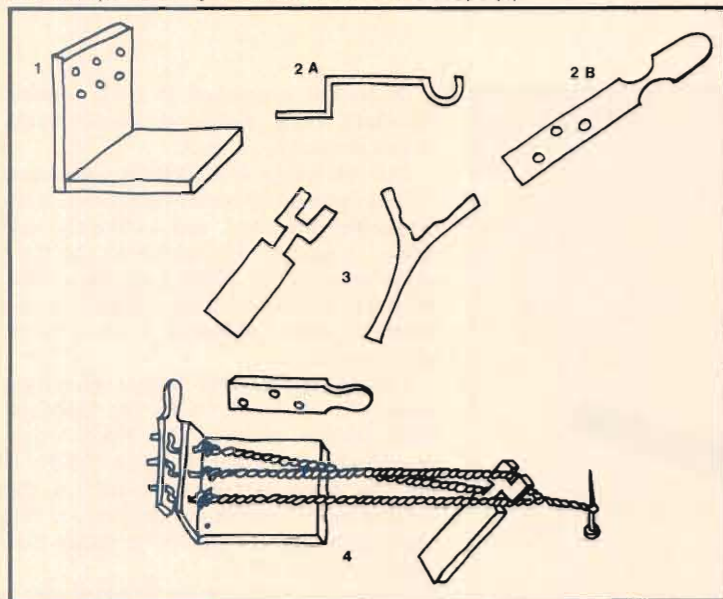
H&K 94: TECH SPECS

Caliber	9mm Para.
Mag Capacity	15/30
Barrel Length	16.54 inches
Rifling	6 groove, 10-inch RH twist
Overall Length	34.69 inches A2 30.05 inches, 27.58 inches retracted A3
Weight	6.43 pounds A2 7.18 pounds A3
Finish	Matte black phosphated
Sights	Dioptr, adjustable windage elevation; and ring front with post.

Rope

(Continued from page 27)

BELOW — Building a rope machine: 1) the stand upright is 3 by 4 by 1/2 inches and has 1/4-inch holes; the base is 4 by 9 by 1/2 inches; 2A) crank is composed of 3 wire hooks (heavy wire or coat hangers 4 inches long) which are bent to form hook loops 1/2-inch in diameter on one end and bent in the shape of crank handles on the other end, and then inserted through the holes of the stand upright; 2B) the handle is cut in the shape of a paddle, three small holes are bored one inch apart through the paddle as shown, and the paddle is slipped over the ends of the wire cranks so the handle will turn all three cranks at once; 3) the rope wrench can be a "Y" shaped stick or piece of wood cut as illustrated that serves to keep the strands apart as they are twisted into finished rope (4).



ABOVE — Twisting and braiding cordage: 1A) collect the fiber or use string you already have, separate and tie them as shown; B) twist the fibers clockwise between thumb and forefinger of each hand; C) at the same time, twist the two cords together counter-clockwise; D) as the fibers grow shorter, add more; 2) small twisted cords may be braided with other twisted cords to make a larger, stronger rope.

Approximate Rope Breaking Strengths, Pounds

Diameter (Inches)	Sisal	Manila	Polypropylene	Dacron	Nylon
1/4	480	600	1,050	1,600	1,800
3/8	1,080	1,350	2,200	3,300	4,000
1/2	2,120	2,650	3,800	5,500	7,100
3/4	4,320	5,400	8,100	11,000	14,200
1	7,200	9,000	14,000	18,500	24,600

7/16" Mountain Climbing Rope

Breaking Strength, Pounds	Manila	Nylon	Goldline
Dry Test Conditions	2500	4575	5025
Wet Test Conditions	2620	3900	4500

is taken off the hooks and the ends are whipped to prevent fraying.

Commercial Rope—Sisal, manila, and hemp, are normally used in outdoor rope work. Synthetic fibers like nylon and dacron are excellent general purpose ropes because of their strength and resistance to moisture but they are too slick to hold tight lashings and therefore not preferred for wilderness construction.

There are great variations in the strength of different rope types of the same size. Before you risk life and limb you should know how much load your rope will take under any condition. As a rule of thumb the safe working load of a new rope is only one-quarter of the rated breaking strength and with the average used rope it

is best to figure only one-sixth. Any time a rope is jerked or a load is dropped, the strain is doubled.

Few people realize that knots, wraps and hitches weaken a rope by forcing a bend that distributes an uneven tension on the fibers. A bowline for example, cuts the efficiency of manila rope by 40 percent while a square knot will reduce the rope's efficiency by 50 percent. Before using, it is important to thoroughly inspect a rope checking for worn spots and broken fibers. The inner fibers should be inspected by untwisting the rope in several places. The rope is considered sound if the inner strands are unspotted and bright in appearance. Another test is to unwind a short single strand and break by hand. If it breaks with little effort the rope is unsafe.

In general, a rope that has become limp or appears dry and brittle should be looked at with suspicion.

To preserve a rope that is not in use, it should be kept as dry as possible. Wet rope will mildew very quickly. The danger of mildew damage is that it is not apparent until the rope breaks. A wet or damp rope should be hung loosely until it is thoroughly dry.

Never step on or drag a rope on the ground. Small particles of dirt will be ground between the strands and will eventually cut them. Avoid placing rope in contact with sharp corners or edges or rocks that will cut it. By the same token, never allow rope on rope. The friction of two ropes rubbing together will cut and burn the rope strands.

A rope should always be coiled in the direction of its lay. The lay of a rope is the direction in which the strands are twisted. Coiling with the lay prevents kinking or breaking when tension is placed on the rope. To determine the lay of rope, pick up an end and note the twist of the strands. Normally the strands are twisted from the bottom left to the top right. The resulting twist is called a right handed lay. Strands twisted upward to the left give a left handed lay. When coiling a rope in the direction of its lay, a right-handed rope should be coiled clockwise and a left-handed rope counterclockwise.

To keep the ends of rope from fraying or unraveling each rope should be whipped.

The end splice and American whip work best on natural rope while synthetic ropes like nylons may be whipped by simply applying a hot iron or flame to the ends melting the strands. Temporary whipping can be made by using tape, clamps or tying an overhead knot.

Mountain Rope—Although it's a far cry from hand twisted cordage no commentary on rope is complete without mentioning climbing rope. A full text could be written on this subject, but the intent here is to provide a general overview of this specialized piece of equipment.

To quote the bible of mountaineering, *Mountaineering: The Freedom of the Hills* (The Mountaineers, Seattle Washington 1967): "Several features are desirable in a climbing rope. It must be strong enough to hold a falling body yet light enough to be carried; tough enough to resist abrasion and cuts yet flexible enough to handle easily with a minimum of snarling even when frozen or wet; large enough to be gripped easily by the hands yet not so large as to be cumbersome; long enough to provide sufficient working space between climbers yet not so long as to be unnecessarily heavy."

From experimentation going back to pioneering days Mountain-climbing Gold-line has evolved as an all-purpose synthetic fiber. Standard rope dimensions for climbers are 7/16-inch diameter by 120 feet long. The 7/16-inch diameter provides a greater safety margin for synthetic ropes and where a climbing rope always seems to be either too short or too long, the 120-foot length has proven the best for all-around use.

One potentially fatal misconception many owners and users of mountain rope have is in thinking that one rope is good for a climbing career. Not so! The life span of any rope is limited and where the life of the user literally hangs by a rope, frequent inspections must be made to determine whether it is still worthy of trust. Weathering alone, barring any cuts and abrasions that result from normal use, greatly reduces the strength of any fiber. Once subjected to a severe strain such as a hard fall, the rope will never be reliable again and should be retired.

Whether securing the gear to a ruck sack, repairing a worn strap, setting a snare or building a shelter the needs of rope and its applications in wilderness settings are infinite. Where possible, an extra supply of strong cord should be included among one's emergency gear.

However, by learning to utilize native material you should never have to do without. Like any wilderness skill the making of cordage takes practice. Don't wait until you need rope to begin. Start now and the skills will be forever a part of you. ●

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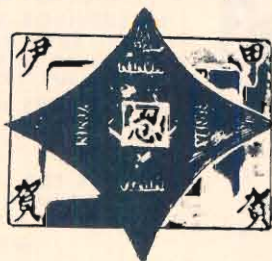
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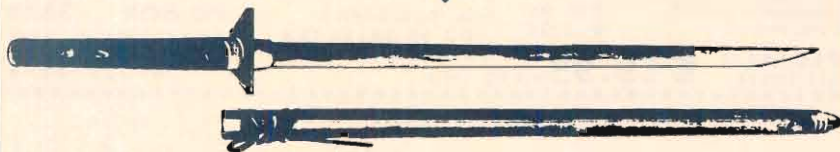


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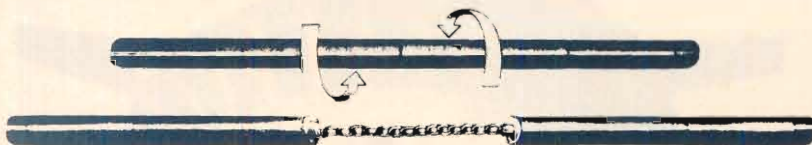


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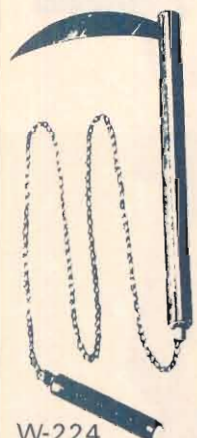


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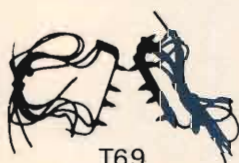


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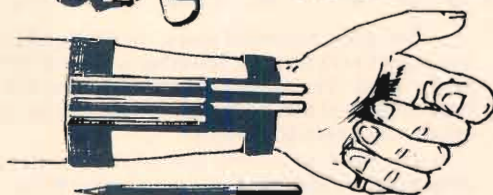
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Survival Knife Alternatives

(Continued from page 29)

effective, triple row, diamond patterned saw teeth of Parrish's Survivor with a full tang and integral double guards. Large saw teeth can be a hindrance on a blade intended primarily for fighting or combat use but the low profile, reverse canted nature of Parrish's saw teeth minimizes the risk of snagging the blade. A storage slot and a hole for a compass are cut out of the 1/4-inch thick 440C stainless steel tang. These are covered by hollowed out, black micarta slabs secured to the handle by stainless steel screw. A cut down piece of magnesium fire starter tool with sparking rod, fish hooks, line, sinkers, and needles, can be stored inside the handle. Either a Swiss Army folding knife or a Leatherman Pocket Survival Tool carried in a pocket on the sheath will provide the tool necessary to gain access to the stored items.

A slightly different version of the hidden compartment concept has been recently introduced by Blackie Collins. His "Combat Master" features a plastic handle molded to enclose the slotted tang of a wide clip point blade. The slightly S-curved double guard, finger contours in the grip area, and oval checkered side panels, are all formed from the plastic of the handle. A screw extends through the handle at the rear of the checkered panels. Loosening this screw allows the right hand panel to pop out of its recess. The panel is then rotated out of the way to expose a hollow space cut out of the steel tang inside the plastic handle. A screwdriver tip is built into the snap on the crossguard strap of the Combat Master's sheath to facilitate loosening and tightening the handle screw.

A completely different solution to the tang problem is available from knifemaker Peter Bauchop of South Africa. He has devised a full length tang hollow handle which is sealed with a threaded brass butt cap. Starting with a full width and full length tang, Bauchop mills out the center of the tang leaving long prongs of steel along the top and bottom of the handle portion. To these prongs he pins hollowed out micarta slabs and forms the end of the handle with a threaded brass ring. In this manner he simulates the tubular handle while maintaining the integrity of the full length tang.

These examples depict only some of the varied efforts by the knifemakers to provide quality knives with a storage capability. Several other examples of tang storage type knives by Tom Enos and other knifemakers are described by J. E. Smith, Jr. in his book *Survival Knives and Survival*.

Compromises—No knife design can be so versatile that it will appeal to everyone or be able to accomplish any task that can be demanded of it. Certain knives, how-

ever, are intended to perform as many tasks and to function under as many conditions as possible. In order to accomplish this and provide some means of storage space, survival knives, by nature, are compromises.

Many cheap commercial survival knives accept a weak linkage between the blade and handle to obtain the storage space a tubular handle can provide. The better quality commercial and custom tubular survival knives tend to trade off some of the space advantage of the hollow handle to insure the strength and integrity of the union between the handle and the blade.

Other survival knife designs opt to retain the simpler solidity of the full tang. These generally provide a little less storage space in the handle and are not as waterproof as the tubular types. They generally require a tool of some sort to be carried, in addition to the knife, to allow access to the contents of the handle.

Regardless of one's particular needs and tastes there is much variety and many alternatives within the field of survival knife designs from which to choose. The next time the subject of survival knives is mentioned, what image will come to your mind? •

Survival Knife Sources

John R. Bartlow
Bartlow Custom Knives
111 Orchard Rd., Box 568
Norris, TN 37828
(615) 494-9421

Lee Gene Baskett
Baskett Custom Made Knives
240 Oakwood Dr.
Elizabethton, KY 42701
(502) 769-5816

Peter Bauchop
P.O. Box 88
Hunt Valley, MD 21030

Blackie Collins
P.O. Box 158
North, SC 29112
(803) 568-3543

Mike England
608 West Fourth
Cordell, OK 73632
(405) 832-3770

Robert Parrish
RP Knives
1922 Spartanburg Hwy.
Hendersonville, NC 28739
(704) 692-3466

W.D. Randall, Jr.
Randall Made Knives
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Home Medical Test Kits

(Continued from page 52)

toilet, and any color changes noted. Older tests required directly placing a stool sample onto a treated slide and noting color changes.

The tests detect the presence of blood in the stool which is often a signal of a possible tumor. A positive test should always be followed by a visit to a physician. Most manufacturers suggest multiple tests since tumors sometimes bleed intermittently. It should be noted that a positive result from one of these tests does *not* diagnose a cancerous condition, only the presence of blood in the stool which can be caused by certain medications, foods, or conditions such as hemorrhoids or ulcers. Some of the available colorectal screening kits are: Hemocult Home Test made by Menley and James; and Early Detector made by Warner Lambert. Costs of the kits range from \$10 to \$15.

Glucose Home Tests—Diabetics, of which there are seven million diagnosed and an estimated five million undiagnosed in the U.S., have long used chemically treated paper strips to measure the glucose level of their urine. As mentioned earlier, urine glucose tests give a delayed reading of actual system-wide glucose levels.

Kits are now available which test blood glucose levels and provide the user with a measurement of the glucose levels currently in the bloodstream. One type of kit uses the same type paper strips as used in the more conventional urine glucose tests. A finger is pricked with a special spring loaded device to draw a drop of blood. The blood sample is placed onto the treated paper strip and the color change noted. The color change corresponds to the glucose level in the bloodstream.

A newer and more accurate (and more expensive) method of measuring blood glucose levels has recently been introduced to the home care market. This kit uses an electronic measuring device into which the paper strip containing the blood sample is inserted. The device then provides the user with an exact digital readout of his blood sugar level.

Simple treated paper glucose test kits for both blood and urine cost from \$10 to \$15 for a kit containing between 25 and 100 test strips. The Chemstrip UG (urine glucose) and Chemstrip BG (blood glucose) tests are manufactured by Bio-Dynamics and are readily available. The more elaborate electronic monitors cost in the area of \$150 or more. Examples include the Accu-Check BG made by Bio-Dynamics and the Glucometer from Ames Labs.

Urinary Tract Infection Test Kits—While urinary tract infections are generally not a major health threat they can be very

painful and if left untreated can spread infection to vital organs such as the kidneys or bladder. The majority of those affected by urinary tract infections are women.

Home tests for urinary tract infection involve using treated paper strips dipped in a urine sample. The strips react to the white blood cells and/or nitrites in the urine. Both can be indicators of infection.

A kit of 100 test strips called Chemstrip LN is made by Bio-Dynamics and retails for approximately \$20.

Ovulation Home Tests—Couples having difficulty conceiving now have available a test which can predict the onset of ovulation. This should increase the chances for a woman becoming pregnant.

Ovulation tests are simple urine tests much like those described above. A few drops of urine are added to a test tube containing indicating chemicals. Results are generally available within one hour. The kits cost from \$20 to \$30. Two of the best known kits are Ovutime and First Response Ovulation Predictor.

Strep Throat Home Tests—Most sore throats are caused by viral infection and are generally more of a nuisance than a serious health threat. One type of "sore throat" however does carry with it a slight chance of developing into something more serious. Strep throat, not caused by a virus but a bacterium, does have the possibility of causing kidney disease, scarlet fever, or rheumatic fever. In order to determine if your sore throat is viral or bacterial in origin it is necessary to take a throat culture and incubate the specimen. The resulting color and density of the incubated culture will tell the nature of the infection.

The home strep throat test known as AFFIRM uses a microprocessor to analyze the color density of the throat culture specimen. After taking the throat culture with a throat swab the swab is incubated for 4 hours in a sterile test tube that is placed within the AFFIRM unit. At the end of the incubation period lights on the AFFIRM unit will light to indicate a positive or negative (bacterial) result. If the test is positive you are advised to seek antibiotic treatment from your physician.

The AFFIRM kit is made by Personal Diagnostics of Whippany, New Jersey, and costs from \$15 to \$20.

Home Medical Instruments—Many medical instruments are available to the general public.

The stethoscope, in addition to its use as a heart and lung sound monitor, is required in order to take blood pressure at home. Perfectly adequate stethoscopes for home

use can be purchased for between \$10 and \$25.

When listening to the heartbeat through a stethoscope listen for a two part sound, sort of a lup-dup sound. This sound is made by the opening and closing action of the heart valves. When taking a pulse using a stethoscope count the complete lup-dup cycle as one beat not two, or you will get a double value of the pulse rate.

Blood pressure monitors can tell you your average blood pressure, your blood pressure after a hard physical workout, or can be used on a regular basis to monitor hypertensive patients. Learning to take your blood pressure is easy, and doing it at home in relaxed surroundings can give a more accurate reading than one obtained in a doctor's office where a patient is likely to be tense and nervous.

Blood pressure monitors come in three types, mercury column, aneroid gauge, and digital. The digital models do not require a stethoscope for use but are more expensive than the other types. Blood pressure monitors range in price from \$30 up to \$250 for the more elaborate digital types. For occasional home use any of the lower priced models will do fine.

Other instruments and tests ranging from otoscopes (for ear exams) to eye charts which test visual acuity and perception are also available to home users.

Future Home Tests—The home health care market is booming. In the very near future there will be home tests coming onto the market for a great many conditions and illnesses. In development are tests for glaucoma, breast cancer, hepatitis, VD, genital herpes, salt levels, bone calcium levels, cholesterol levels and more. These tests will allow the individual much greater participation in his own health maintenance program than ever before. Home health kits and tests also serve to help lower routine medical costs which have skyrocketed. They do not, however, replace the physician. These tests are designed to be used as an adjunct to normal routine medical care.

For further information we recommend the following books: *Do It Yourself Medical Testing*, by Cathey Pinckney and Dr. Edward Pinckney, published by Facts On File; and *A Physician's Complete Guide To Medical Self Care*, by Dr. Timothy Rumsey and Otto Otteson, published by The Ratledge Press.

There is also an excellent bi-monthly magazine devoted to home health care called *Medical Self Care Magazine*. The publishers of *Medical Self Care Magazine* also put out a complete catalog of self care equipment, books, etc. Write to *Medical Self Care Magazine*, Box 1,000, Point Reyes, CA 94956, for more information. ●

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Survival Kits

(Continued from page 38)

controlled to some extent by avoiding the potential attack areas or situations. Avoidance preparation might require less equipment.

On the other hand, protection weapons can also double for food collection tools. A decision would have to be made whether to choose a specialized weapon for hunting, one for self defense or to carry two weapons. A third possibility would be to decide on one weapon versatile enough to serve both needs.

Air—Typically, the crisis would involve someone buried and suffocating or a victim of extreme trauma whose breathing has stopped. The indicated action would be to administer cardiopulmonary resuscitation (CPR). Again, this would require no first aid kit unless you didn't know CPR or the victim needed a shot of pure oxygen. Having an instruction manual with you is not too much help since the victim needs immediate treatment requiring an almost automatic response from you—acquired only through training and practice. A little sweat and brain exercise here will save you space in your first aid kit.

Shelter From Cold, Heat—When exposed to either extreme cold or heat, the human body won't last long without protection, perhaps a matter of hours. With survival skills you could construct a shelter from natural materials. But, when an hour makes all the difference between life and death, time again dictates your needs. A shelter can be erected immediately or the proper clothes can be donned quickly. By providing yourself with fast protection, you have then bought yourself time to construct a more permanent shelter. Selections indicated here would include: a reflective tarp for both hot and cold, warm clothes, socks and an insulated jacket.

Water—Hot, dry air will dehydrate you fast enough to require replacement of your lost body water within hours. Water is too heavy to carry much of it with you, but you need a small supply to buy you time to search for more. Failing to find a potable source you will have to rely on equipment in your kit to collect it from the ground, air or plants. Or, you must purify naturally occurring water you may chance upon. My first selections would be a few sealed cans of water or a couple of canteens of water. Next, I'd make sure I had enough plastic sheeting to construct at least several solar stills.

Sustained Warmth—Under extreme conditions, you'll need more warmth than what a simple shelter can provide. Under this category, I would place three sub-headings: (1) fire, (2) fuel, (3) clothing.

While normally associated with keeping warm, fire has a number of other uses

helpful to various aspects of survival: sterilization of medical implements, melting snow for water, gathering food and making some foods more digestible and tasty. It is also used to fell large trees, temper both wood and metal tools and to burn out logs to make boats. Fire can be used as a psychological comfort and to ward off potentially dangerous animals.

Starting a fire is one thing, sustaining it is something else. It's best to assure yourself of an adequate supply of fuel before starting a fire to be sure you don't have to start it twice. Fuel usually means wood, coal or a petroleum product such as kerosene. Medical alcohol can double for fuel, but puts out much less heat than a petroleum fuel. The option to carrying fuel with you is to carry the tools which can help you gather fuel: saw or axe for trees and limbs.

Like fire, clothing has many other uses besides providing warmth: protection to your skin from cuts, scratches, abrasions, biting insects, snake bites, and from prickly and poisonous plants.

Plan to wear your "survival" clothes as part of your normal outing attire. Clothes are bulky and usually don't fit in any container other than the largest survival kit. Short pants feel great on a hot summer day and are appropriate if you are positive you will be home that night in a warm room and with medicine to sooth all the attacks your skin sustained during the day.

Food—Often you can survive long enough on your body fat to locate and gather some wilderness food, but cold and the expenditure of energy can burn up your reserves quickly. When your body enjoys the best of health, you possibly could walk or do light work over a period of one to two weeks with little or no food. But your brain operates best while receiving daily carbohydrates. This means that you might get along fine for that period of time with only a one-pound bag of candy in your survival kit. But for the average person, a better description of the food he would need under survival conditions would be *complete nutrition*.

While you may have enough energy to do minimal tasks, your body will soon show signs of the missing nutritional elements. Two weeks is long enough for these shortages to create dangerous symptoms: poor coordination, speech, vision and thinking processes. In the form of nutritional supplements, you can carry a two-weeks supply in a medium kit. Your option here is to carry around a two-days supply of food, but supply yourself with food gathering tools: snares, traps, guns or nets.

Signals—There are two primary reasons for signaling: when you want to be rescued as quickly as possible and during tactical situations when you want to signal as pri-

vately as possible. Traditionally, rescue signals are: three shots; red flares; three blasts on a whistle or horn; SOS by blinking light; fires at night; smoke during the day; designs of rocks or limbs laid on the ground; or a transmitting radio. Probably the best all-around survival signaling device is a simple mirror. There are other more sophisticated signaling devices that you may want to consider for specialized situations which will be covered later.

Health-Sanitation—Though health is more of an on-going process of preparation, survival kits should contain the means for personal sanitation and hygiene. You would want to consider: needed medical prescriptions; eye glasses; toilet paper; soap; towel; face cloth; toothbrush; and certain antiseptics.

Escape-Evasion—Future conditions would play a role in this consideration: politics; war; civil unrest; persecution or professional duties. During World War 2, American fliers were often issued tiny escape kits in the form of buttons and insignias to be used in the event of capture. Though this strategy may be remote now, when the need arises it will become an urgent one. You'll need maps, food, money, caches, identity papers and above all, a plan.

Travel—This application might include: evasion; escape; chase and rescue. Sometimes staying put is the best survival strategy, but more often you will be on your way to some objective. If surgical or medical aid is needed and you are without means of signaling, travel may be your only option. Your mode of travel would probably involve the options of: (1) the vehicle at hand which would require a good tool and spare parts kit. (2) Travel by foot. Your feet would appreciate good boots and a specialized kit designed for foot care and repair. (3) Water travel could offer you a free ride on a river, lake or ocean—if you had a boat or raft. An adequate craft could be constructed from logs by using chipped rocks, fire and twisted plants, but you would save a lot of time and energy by using an axe, saw and rope. You might even stow a one-man inflatable boat for the same space and weight as the above tools would require. Another factor you should study is the ability of your own body to travel under adverse conditions and the amount of weight you could bear over distances of 10 to 20 miles per day.

Light—In addition to use as a signal, light can buy you more valuable time while finishing your survival preparations at night. Light can also be used when you must travel at night—a common situation on the desert. As with a fire torch, you can also use a flashlight for night hunting and

fishing.

Repair and Maintenance—If any vital survival item breaks or wears out, it obviously would require repair. An exception might be when your survival period is of short duration, which is hard to determine in advance. An alternative use for repair kits is for constructing additional survival gear. This kit would probably include tape, wire, glue and pliers.

Survival Manuals—I have yet to see a manual which contains all the vital information a survivalist would need to know, but for now, you could supply yourself with two manuals in paperback covering first aid and general survival. One more manual could prepare you for a specialized environment such as the desert. One manual can make up for a lot of heavy equipment and they do save you time by eliminating much experimentation by trial and error. There is no substitute for a good first aid book regardless of the size of your medical kit. Another option is a microfilm reader.

Another practical use for a survival manual carried in your pack is for its psychological support. When suddenly thrust into a survival situation, you are treated to a certain amount of shock and stress. Often, the mind becomes short-circuited and requires help. By simply sitting down and reading how your trusty manual is going to get you out of trouble, you begin the needed process of logical and rational thinking. This could replace the oft-repeated advice to, "Sit down and light up a cigarette in order to collect your thoughts."

Containers—Though this may seem to be a logistics subject, your kit container could be the factor which dictates the availability of your supplies. Will it fit into your pocket, pack, glove compartment or automobile trunk? It should be waterproof and, if possible, crushproof. Choose your containers with an eye to its anticipated need and use.

Vehicle Repair Kits—Make sure you have a complete tool kit suited to your chosen mode of transportation as well as critical replacement parts.

Special Tools—This refers to anything needed for special missions, projects or for serving your special skills. For example, special tools could range from firefighting equipment to horseshoeing implements.

Nuclear Threat—If you feel conditions will require you to have protection against radioactive fallout while far removed from your retreat area, you'll want to consider such items as a radiation suit, sealed food packages and air and water filters. ●



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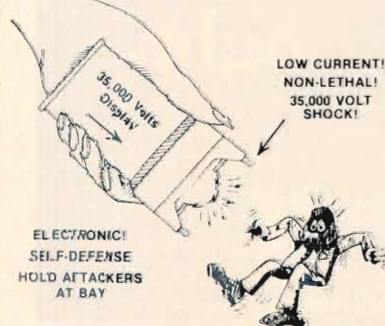
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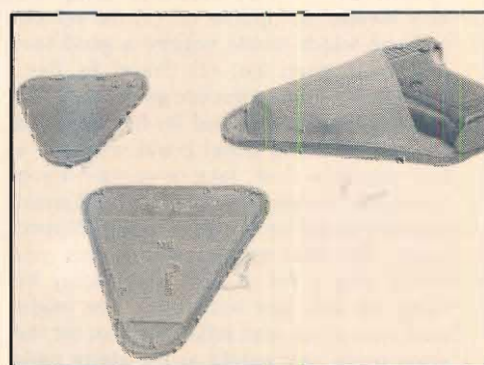
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Eliminating Fish Toxins

(Continued from page 55)

out the lateral line, and cut away any fat around the dorsal fin. Fourth, remove any other visible fatty tissue.

CAUTION: If your fish is over three pounds, and you speared it in potentially polluted water, chop the meat into one-inch cubes (chicken bits style). Drop the cubes into a collander, or wrap them in cheese cloth (even a clean tee-shirt will work). Then use your hand to twist, squeeze and push as much oil as possible from the fish.

Cooking—BROIL the fish, especially oily fish. Fat and most toxins will drip away.

ORIENTAL STYLE, Chinese wet cooking is a clean and effective way to prepare fish. Put a pan of water on the coals. Season the water with dill, white wine and soy sauce. Place a grate over the pan. Arrange the pieces of fish on the grate and close the lid on your grill. The steam cooks the fish and flavors it. The toxic fat drips away. In the field—where you don't have a grill—pour water and spices into a pan, then lay your fish on a metal steamer basket. Place the basket in the pan, as if you were steaming vegetables, set the pan on the campfire coals.

PLANK STYLE cooking is my favorite. Split a six-inch log in half. Spread the fish fillets on the log, and set the log near the fire. The fish is slow cooked, smoked . . . and the fat drips away.

OVEN BROILING is also recommended, especially if the fish bits are elevated on a rack, so fat can drip away.

POACHING removes oil from a fish, albeit the meat floats in the water bath of oil and possible toxins.

FRYING AND SAUTEING are the least desirable ways to cook potentially contaminated fish. If you must cook your catch in this manner, never use the oil twice. Throw it away after every meal. Drain and dab the meat dry before eating it.

Making A Difference—By preparing your fish in these prescribed ways you may eliminate most toxins from the animal's flesh. But what of the greater problem, the continued dumping of contaminants into our nation's water supply by agriculture and industry. What can be done? Charlie Dudley did something. Doc and I drove by his farm pond the other day. He had posted a sign. There crudely painted on a plywood slat was a skull and cross bones. I imagined another sign, with the same skull and bones, yet big enough to spear into the planet Earth. A warning to distant visitors about a people who had it all and died from the excesses. I wrote my congressman that night and let him know I was alive . . . and liked the feeling. I suggest you do the same. ●

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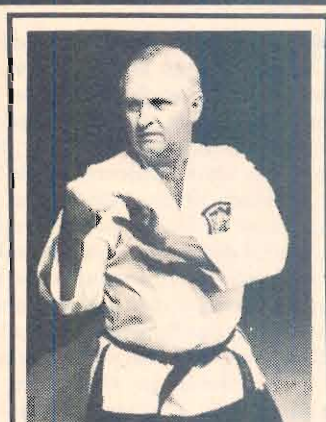
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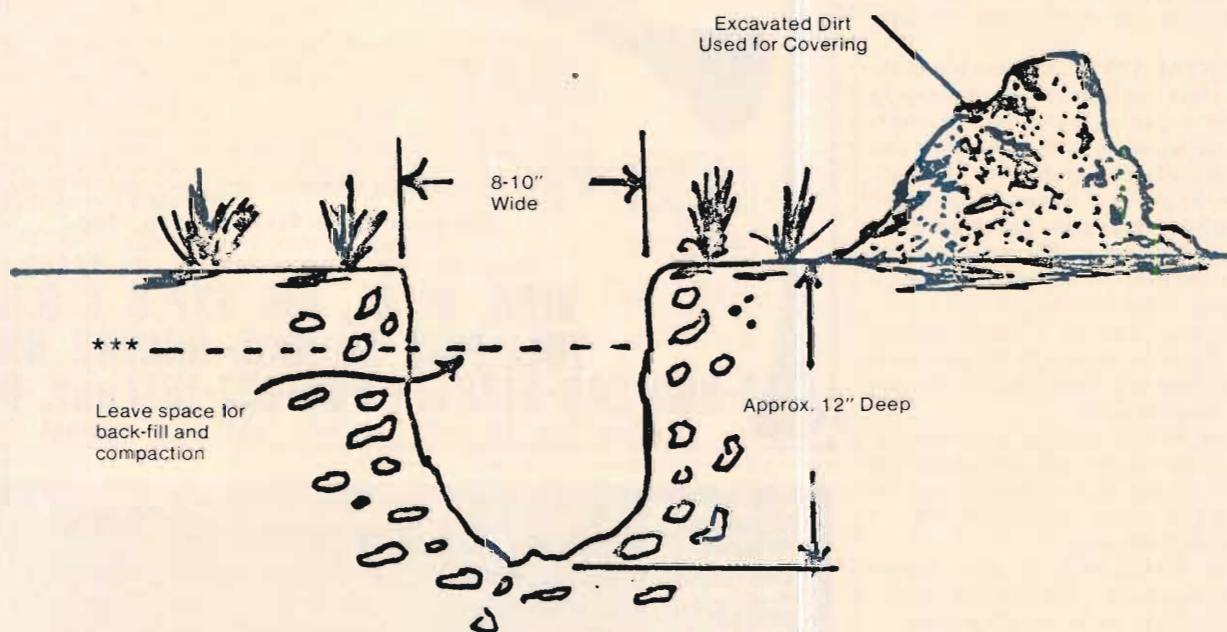
Waste:

Field Sanitation

Special precautions must be taken when living under field conditions . . .

By W. Ed Poe

BASIC "CAT-HOLE" LATRINE



AS MANY Southeast Asia combat participants learned, human excrement can be deadly, or at the minimal, create a very long recuperation period from internal infections. Human defecation problems are no different in the Northern or Southern Hemispheres of the Americas than those in Southeast Asian countries.

Special precautions must be taken when living under field conditions or in a true survival condition to prevent serious and sometimes deadly health hazards caused by improper disposal of body waste.

It is unfortunate that more outdoors skills schools, scouting organizations and various phases of military training do not provide in-depth sanitation training for those persons who must leave the home or pre-fabricated "Johns" behind. Continual pollution and contamination of our rivers and streams, woods and fields will eventually effect the well-being of everyone, especially under a long-term survival scenario.

The days of "going down to the creek bed" or "in the back woods" should be



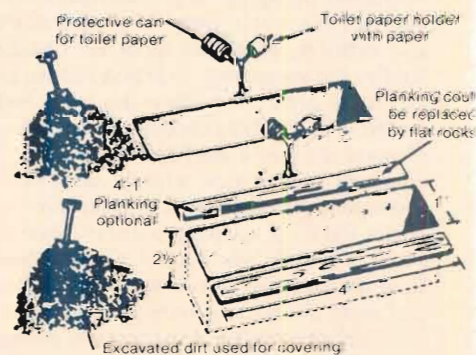
behind us, however, it isn't, especially in many of our public camp areas and open

ABOVE — On-the-move wilderness travelers find the basic "cat-hole" to be an acceptable sanitation method for one-day or convenience stops.

LEFT — A bygone era of sanitation may return if a national long-term disaster occurs. This old timer is a fancy two-holer, complete with Sears catalog rack and air venting system.

BELOW — Groups and long-term camps may use the more comfortable "straddle trench" method of waste disposal. The trench may also be used as a garbage/rubbish burn hole before being refilled.

STRADDLE TRENCH



lands.

On several occasions I have seen and smelled camping areas polluted due to improper human waste and garbage disposal. It was sad, knowing the areas were recently used by fellow Americans who should have known better.

On one particular outing, I was leading a group of hikers/campers into an area for skills updating. We entered an opening along the trail for the purpose of taking a short break and having lunch. The wooded area around our intended rest area looked like a toilet paper flower garden and a recycling operation for C ration cans.

It took us two hours of hard "humping," but we finally caught up with the group that had left the "flower" garden and litter. The full force and wrath of over 200 years of total military service by "officers and gentlemen" came down upon an R.O.T.C. sergeant and his cadet officers. Later, letters from several ranking officers in my group to the University president and the R.O.T.C. commanding officer were sent. Results: two-day training session by the R.O.T.C. cadets in field conditions sanitation and one long weekend of litter duty on a stretch of river.

As you are aware, unsightly conditions in the wilderness are only a small part of the problem. The major factors with improper human wastes and garbage disposal are contamination of the area, disease and vermin potential and the inability of future land use by others in time of need.

If improper methods of disposing of human wastes and garbage are employed, the area quickly becomes an ideal breeding ground for flies, rats and other vermin and rodents. Filth-borne diseases such as dysentery, typhoid, paratyphoid fever, cholera and plague could be generated and become hazardous, not only to the immediate area, but other areas as well. Rivers and streams can act as disease carriers into down-stream camps or communities, just as the natural movement of rodents and arthropods (Flies, mosquitos, fleas, roaches and lice) may do.

Proper control and disposal methods of the wastes and garbage must be determined by several factors: Length of stay in the area, number of personnel involved, available supplies/chemicals, type of soil, nearness to clean water and campsites, and in some cases, concealment of personnel movements. (No pun intended)

If you will be in the wilderness for the purpose of establishing a long-term base camp for rotating personnel, I suggest you procure a copy of the *U.S. Army Special Forces Medical Handbook—ST31-91B*. The manual will provide information necessary for wastes and garbage disposal for large groups and long-term operations. To cover this material at this time is not practical due to the many varied methods available. We will, however, cover small group maneuvers.

(Continued on page 70)

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Field Sanitation

(Continued from page 69)

Small Moving Groups—Normally, the field contamination problem is rare in base camps due to having trained personnel in charge. The real problem is created by the small moving groups that stay in one area for short periods of time only. Many of these people feel that they won't be back in the area or that Mother Nature will take care of their disposal problems. Both are incorrect assumptions. Hikers/campers may have to return via the same trails due to various situations, and Mother Nature is powerful, but not powerful enough to abort an epidemic. She may not be able to prevent you from setting up a late night camp in the contaminated area or stepping in some other hiker's waste.

For those on the trail or backwaters, the single-use "cat-hole" is the best method of excreta disposal. Depending on the type soil and working bacterial layer, a cat-hole can be dug, used and re-covered quickly and in a sanitary and concealed manner.

A cat-hole or individual latrine is dug approximately one foot deep, eight to ten inches wide, used and then completely covered using the excavated soil, well compacted and then covered with ground debris and compacted again. If the cat-holes are to be used more than once, they should be dug deeper in the beginning so that the final layer of excreta is approximately eight inches under the ground surface level where natural bacterial action is best. If possible, any paper should be burned that is not biodegradable.

Larger and deeper cat-holes can be utilized for garbage/rubbish if burning is not permitted or it is not feasible to carry it out as you go. Ashes of burned garbage should be buried using the cat-hole method, also. If doesn't hurt to leave clean tracks behind you.

A larger straddle trench latrine should be utilized when several personnel are to be based on the location for one to three days. These trench latrines should be deep enough to permit use as a final-day burned garbage/rubbish disposal hole, yet maintain a minimal of one foot back-fill and compaction.

The *National Outdoor Leadership School* (NOLS) advocates replacement of every rock and other natural materials to their original positions. This is not a bad idea in parks and along public-use lakes and rivers. However, under true survival conditions, a severe clean-up-straighten-up policy should not be implemented unless concealed personnel travel is in order. Even then, a good tracker can follow your trail.

Placement of individual or group field latrine and garbage holes are not only important to health, but morale as well. Latrines should be accessible at all hours. The path to and from should be free of trip

(Continued on page 72)

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Heart Disease

(Continued from page 51)

you can take to save yourself or others.

The warning signs of a heart attack are: uncomfortable pressure, fullness, squeezing or pain in the center of your chest lasting two minutes or longer; pain spreading to your shoulders, neck or arms; severe pain, dizziness, fainting, sweating, nausea or shortness of breath. Not all of these warning signs occur in every heart attack. If some of these symptoms do start to occur, however, don't wait. Get help immediately!

In an emergency, find out which hospitals in your area have 24-hour emergency cardiac care and determine in advance which one is nearest to your home. Tell your doctor, family to call this facility in an emergency. Keep a list of emergency rescue service numbers next to your telephone and in your pocket, wallet or purse. Call the emergency rescue service if you believe you need help. If you can get to a hospital yourself then don't wait for help, get there yourself or have someone take you. If you're with someone showing signs of a heart attack, act immediately. Expect a denial. It's normal for a person with chest discomfort to deny the possibility of a heart attack. Don't take "no" for an answer. Insist on taking prompt action. Call an emergency rescue service or get the person to the nearest hospital with emergency cardiac care. If necessary and you're properly trained, give cardiopulmonary resuscitation (mouth-to-mouth breathing and chest compression).

The warning signs of a stroke are: sudden, temporary weakness or numbness of the face, arm and leg on one side of the body; temporary loss of speech or trouble speaking or understanding speech; temporarily dimmed vision or loss of vision, especially in one eye; unexplained dizziness, unsteadiness or sudden falls. Remember that major strokes are often preceded by "little strokes" with warning signals like those above. These signals can come days, weeks or even months before a major stroke. If you or someone else experiences these symptoms, get medical attention immediately.

Prevention—As was stated earlier, stopping smoking, regular exercise, regular health checkups including blood pressure checks, and a diet low in fats and cholesterol (as well as less sugar and salt) can help reduce the risks of heart and blood vessel diseases. Prevention is a far more desirable method of combatting cardiovascular disease than obtaining costly medical treatment after you discover you have a problem.

Contact your health professional or your local American Heart Association office for more details on what you can do to prevent CVD and to help yourself or others who have it. ●



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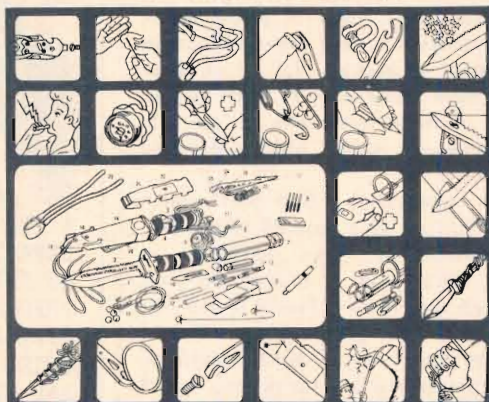
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Field Sanitation

(Continued from page 70)

hazards and low branches. Certainly, the latrine area should be placed down-wind from the camp area. If time and equipment permits, a trap can be placed to provide privacy (hence "privy"). Also, an upright forked stick for toilet paper and a can to cover it. With individual cat-holes, these accessories should not be required.

Food, Water—To protect food and drinking/bathing water supplies from possible contamination, place the disposal area (group or individual) at least 50 yards from camp, preferably 100 yards. If food is not to be prepared or an overnight stay is not imminent, the distance can be less, but never less than 100 feet in non-travel areas.

Before digging any latrine or garbage hole, look at the lay of the land. Natural drainage areas leading into rivers, lakes, ponds or camp areas should be avoided if at all possible. Even though the excreta or garbage is well covered, heavy rain and water run-off may dislodge the hole cover dirt and contents, washing it into the areas that may later become contaminated.

Once an area has been selected for latrine and garbage disposal, notify all personnel of the location and require everyone to use *that* area. In camps where several nights may be spent, additional sanitary procedures may be necessary. Spraying the area and holes for flies, chiggers and ticks, providing stand-on or sitting boards or a supply of lime for spreading over the holes may become necessary. Rather than have the personnel carry a shovel or trowel to and from the area, it is best to leave one at the scene. The best shovel for this type of job is the U.S. Army Tri-Fold Paratrooper. It's strong, lightweight and makes either a shovel or a hoe.

Since it is so easy to use the lakes, rivers and streams as a means of urine, soap/grease and can disposal, most people in the wilderness do. Once in the water, the items are no longer seen, so they are forgotten. If a city or industry did the same thing, the same people that pollute the wilderness would raise all kinds of hell. Use cat-holes for cans and grease/soap and urinate far enough from water's edge to permit filtration during rain times. If available, biodegradable soap should be used under field conditions.

Regardless of length of stay in the wilderness or reason for being there, keep sanitation high on your daily observation list. Provide ample hand washing facilities for the personnel and police the area as frequently as necessary to maintain camp cleanliness and a natural look. As the old saying goes (or close to it)—"Don't mess with Mother Nature." If she doesn't get you for improper disposal, then I will, if I catch you in the act. ●

Kershaw Kai Cutlery

(Continued from page 78)

makes a full range of knives, including several survival knives.

The firm sent ASG three samples of its products for review. ASG's staffers were pleased. The knives provided were a Sheath Hunter, Folding Field and Black Horse Survival Kit.

Kershaw's Sheath Hunters are made of high carbon AUS 8-A stainless steel, rated Rockwell C57-59. They are mirror polished and the handles are contoured with finger grooves for comfort and cutting control. They are available in a variety of blade lengths and design, featuring handles of phenolic and brass or "Task Force" rubber polymer grips. We got the No. 1034TF with 5-inch drop point blade, black Task Force rubber grips and Cordura/Hard Shell sheath. The overall length of the knife is 9 3/4 inches. This would be an excellent blade for hunters, especially for skinning duties. Care must be exercised in placing this knife in its sheath, as the razor edge of the blade can cut into the sheath material. It's \$40.

The Folding Field, No. 1050, is also obviously a good knife for the hunter and outdoors enthusiast. It has a 3 3/4-inch drop point blade and 4 3/4-inch phenolic/brass handle with finger grooves and comes with a fine harness leather belt scabbard. The wide, precision fitted, locking blade is strong. This knife feels great in the user's hand and its blade opens and closes with a smooth action. Ideal for many hunting/camping chores. Suggested price is \$65.

The Model 1060SS Black Horse Survival Kit blends all the elements of Kershaw's larger 1005 Survival Knife, a fixed blade, hollow-handle knife with survival gear. But the 1060SS offers the same survival gear along with a folding, lock back hunter knife with Task Force handle and Cordura belt pouch to carry it all in. The blade is a locking clip type 4 inches long. Closed the knife measures 4 7/8 inches. It fits snugly and securely inside its Cordura survival belt scabbard along with a precision liquid Brunton compass and instructions on its use, waterproof survival cards, reflective back-tracker strips, sharpening stone, bandages, antibiotic ointment, suture and needle, safety pins, razor blade, water purification tablets, fishing hooks, leaders, monofilament line, fluorescent fly tying yarn, split shot, waterproof/windproof matches and firestarter wicks. Suggested retail is \$80.

These and other Kershaw Knives Kai Cutlery items are available at sporting goods stores and other retail outlets nationwide. For more information or a free 1986 Kershaw Kai Cutlery Ltd. catalog, contact Kershaw Knives Kai Cutlery USA, Ltd., Dept. ASG, 25300 S.W. Parkway, Wilsonville, OR 97070; (503) 682-1966. ●

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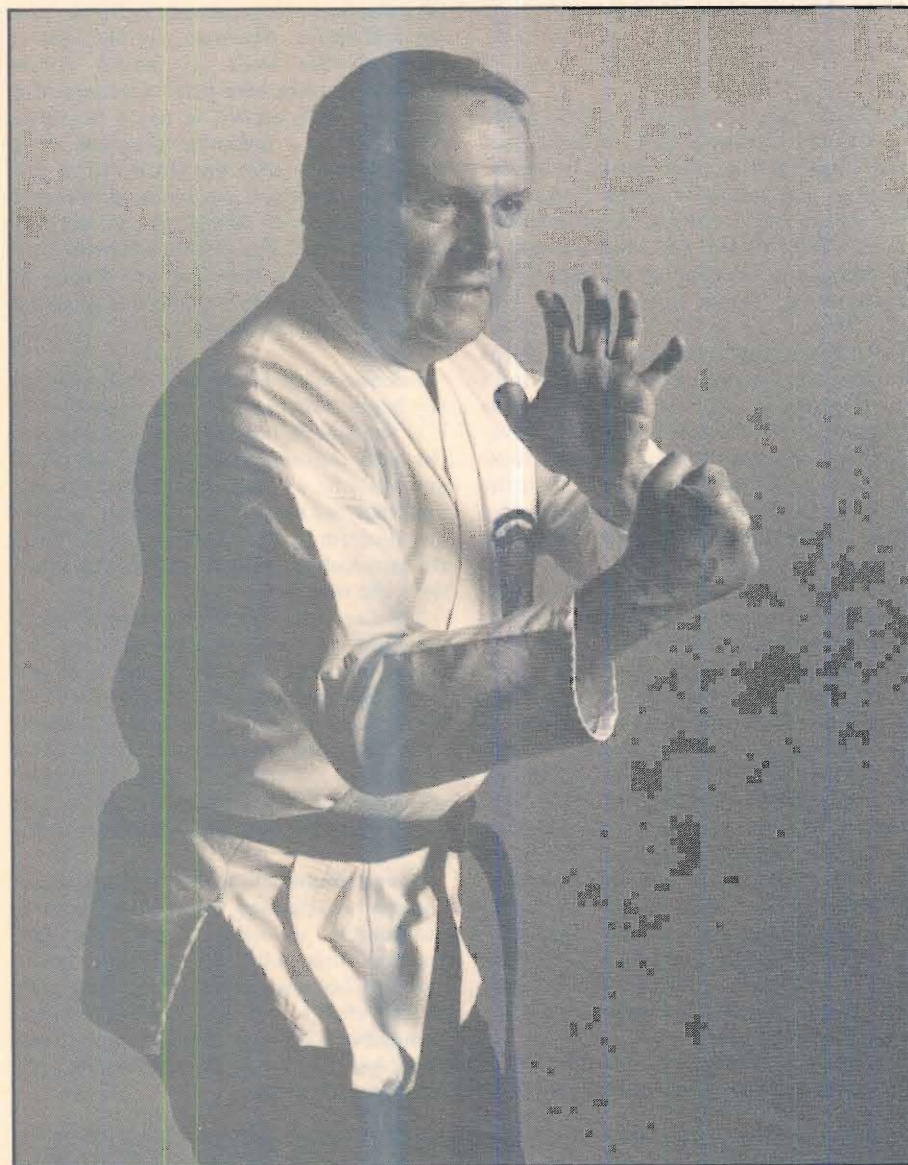
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McSweeney's Self-Defense System



The unarmed portion of McSweeney's self-defense system involves techniques drawn from karate, kung fu and boxing. (Peter LeGrande)

FIRST A WARRIOR or all else is folly," says John McSweeney, referring to an ancient philosophy as he introduces his "McSweeney's Self-Defense" system on video tape.

One of the oldest premises of English common law, he continues, is the right to self defense. "Unless an individual can defend himself effectively he jeopardizes his right to life."

McSweeney's self-defense system is covered in depth on three video tapes he has produced in conjunction with City Video Productions. Two of the tapes, covering unarmed self defense, were adapted from a cable television series he did called "In Defense Of Yourself." The third tape covers armed self defense and

includes instruction in instinctive point shooting techniques with handguns as well as use of knives and other weapons.

McSweeney has unique qualifications for his work. He served in the U.S. Navy in World War 2 as a 20mm gunner on an amphibious ship. During the Korean War he was a security officer in the U.S. Air Force and "did a lot of bodyguard work with heavy emphasis on weapons." He later served seven years in the active Army Reserve as an infantry captain. McSweeney began studying karate in the 1940s and holds black belt degrees in both karate and kung fu. He has also studied boxing.

"McSweeney's Self-Defense is a complete personal protection system which

teaches you how to build a strong, healthy body and how to defend it effectively," McSweeney says.

For the unarmed self-defense portion of his system, he says, he has taken what he considers to be the best elements of karate, kung fu and boxing and combined them, along with physical culture exercises he calls "Tiger Moves," which imitate the stretching actions of a tiger, for physical fitness.

"The system is simple, easy to learn, and the moves are natural," McSweeney says. "I avoid the complicated or the difficult, such as high kicks." The strikes of his system, he adds, "are the key to my system. The techniques have certain advantages for body movement, and balance, coordination. But the key is the strikes, because striking trains the motor nerves." The system can be learned in about 40 hours of training, according to McSweeney, and can be perfected on your own in a lifelong regimen of training 20 minutes twice a week. "I'm not teaching a sport: Who's the best? Who's champion? What I'm teaching you is how to build a strong, healthy body and how to defend it effectively. There's no mystique. It's for the American mentality."

The armed self-defense tape provides detailed instruction in methods of instinctive point shooting with handguns which McSweeney has developed. He is highly critical of the popular and dominant two-handed shooting methods involving aiming with a gun's sights. "Police statistics are that 50 percent of all gunfights take place within 5 feet . . . 90 percent within 5 yards," McSweeney says. "And yet they train at 15 yards and 25 yards and aimed fire . . . 75 percent of gunfights take place at night. How do you look at a sight at night?" His system teaches gunfighting in which you look at the target, never at the gun or the sights. "This is a system that's realistic. It goes with the flow." McSweeney prefers the Colt .45 auto pistol and .38 Special revolver for this kind of close-up self defense. He also discusses ammunition and recommends certain types of ammunition for these weapons. Additionally, the tape teaches defensive techniques for fighting with knives, the yawara stick and police baton—for which a large Mag flashlight can be substituted.

The video tapes can be ordered for \$49.95 each plus \$3 shipping and handling per tape. If all three are ordered the purchaser gets free a copy of the bodyguard handbook *Executive Protection*. For more information or ordering, contact City Video Productions, Dept. A&G, P.O. Box 1218, North Riverside, IL 60546; (312) 449-0434. ●

Women Shooters:

Teach Her Well

Your finished product should be a survivor . . .

By Scott K. Haralson



THINK ABOUT SURVIVAL for a moment. Survival isn't just a man's job. In fact to an ever-increasing degree in the future, "survival" tasks are going to have to be shared by men and women alike. But we really don't have to look to future disaster or civil disorder to practice the type of survival I'm referring to.

I'm talking about the every day potential hazards a woman faces anytime trouble knocks at the door. But how often is the woman prepared to meet these potential challenges? And more importantly, how can a woman make ready for life-threatening situations in which she might find herself?

In this article, I hope to give you some raw material to answer those basic questions. And like any raw material, it needs you to fashion it into a finished and useful product. The product I want to help you produce is a woman who is knowledgeable in the safety and basic use of firearms—particularly handguns, those weapons that may be the easiest to acquire and use in an emergency encounter where survival is one of the prime concerns.

Men have traditionally held to the view, "If I can shoot it . . . you can shoot it," when attempting to instruct women on the proper handling of firearms. Nice theory,

but it just doesn't hold true in most cases.

Women have special needs in many areas and shooting handguns should be no exception. The generally lighter frame of a woman is a prime example. Another difference is most women are unaccustomed to handling any firearms at all and regard handguns as foreign objects at best. Finally, there's the point of basic interest. Self-defense handgunning may not be the number one priority on your favorite girl's list of weekend activities, but with a little patience, a lot of rounds and some weekend time, this could change. Keeping these points in mind, let's discuss how to get the most out of these needs while setting up a basic handgunning instruction course for women.

First, establish what your basic objectives are by asking yourself what it is you want to accomplish. First and foremost in the end-result category should be confidence. You want to help the woman develop confidence in herself and in her ability to use a handgun effectively should the need arise. You start building this confidence from day one by exposing her to the right gun for her, not too heavy and definitely not too much recoil when fired. Too much recoil the first time out can spell the end of interest for the novice shooter or failing that, at least produce a seriously "gun shy" frame of mind that could take a very long time to overcome. Start small and work up. The big guns will always be there if she desires to give them a try.

Patience is another concern that has to be considered whenever the woman you're

instructing is unfamiliar with handguns. This is a point often overlooked by men who grew up with guns and believe a woman should be able to handle the same type of gun almost as well. Patience with a woman shooter is time. Take the time to understand what her needs might be and take the time to instruct her in the various dos and don'ts. Above all give her time to learn. Unless she's a natural Annie Oakley, she will take time to acquire the degree of skill needed to use a handgun effectively in a defensive situation. You didn't learn to take the black out of the bull's-eye overnight, you know. A woman's unfamiliarity with handguns can work to your advantage. If a woman has never shot before she can't have any bad habits to break. This is a very big plus to you as the self-appointed instructor.

Safeties—One of the best ways to actually begin teaching a woman to shoot well is to familiarize her with the various safeties and characteristics of the unloaded gun that she will use. Again start simple, preferably with a revolver of decent quality and medium to small caliber. Let her hold the gun and be ready to answer any questions she may have.

The next item is very important. Explain the sights and how to align them on the target, stressing the whole thing that the front sight should be the only point in sharp focus. If this is properly explained, understood and adhered to, it shouldn't be long before she is capable of making some very accurate shots, which will go a long way toward building her confidence early on.

Next demonstrate a couple of the more popular two-handed grips along with a comfortable shooting stance. Let her practice these with the unloaded piece until she becomes accustomed to the grip of her choice and her favorite stance. Remember what is perfect for you may not be for her. She has to be comfortable with the grip and stance.





Then set up some appropriate targets at fairly close range, somewhere between 7 and 15 yards (about the average range for the usual shooting training). With this done you are now ready to demonstrate with live ammo what you've been showing her. Load up and pop off a few disciplined rounds at your target, talking to her between the shots to further explain some of the finer points, such as trigger control, breathing, one- or two-eyed sighting, and double or single action. Single action should be all that is used at this time because of its inherently more accurate characteristics.



And when she's ready, show her how to load and unload. Let her do it and stress sighting and trigger control as she takes up a stance on the firing line and squeezes off her first rounds. (Don't forget eye and ear protection!) Encourage her, and make her take her time. Point out between shots the mistakes you see and ask her how she could correct them. Don't be too critical and retain a relaxed approach throughout the session. After she has fired a few rounds and is familiar with the way the weapon handles during firing, walk her through the same procedures only this time "dry firing" without ammo. Any trigger jerks or other tendencies will probably show up at this time. Discuss them and correct them.

Let her live fire as much as she wants, keeping in mind there may be some tiredness in shoulder and arm muscles. A good short session the first time is preferable to a tiring all-day extravaganza.

This and future shooting exercises should be based on three axioms of good shooting instruction. They are: build confidence in the shooter; discourage bad practices while reinforcing the correct ones; and finally develop an interest in shooting by encouragement and steady improvement through practice. With these in effect, a woman who has had little or no previous handgunning experience should be capable of basic self-defense shooting should the need arise.

At the beginning of every shooting session, self-defense principles should be covered. These include thinking under stress, safety even in the emergency, and employing cover and concealment to minimize yourself as a target while firing.

Thinking under stress includes being familiar enough with the weapon at hand to know if it's loaded and being able to load it quickly if it's not. She must know how to disengage and engage the safeties.

If the weapon is an automatic, she must know whether it's chambered and how to do so if it's not. These all sound like trivial considerations but in an emergency situation where the mind is racing at top speed, already occupied with a score of different whys, hows, etc., the last thing a threatened woman wants to worry about is whether the weapon she has to defend herself with is going to work if she pulls the trigger. Familiarity and clear thinking cannot be emphasized enough.

Safety in the emergency goes alongside clear thinking and must be employed if the woman is to come out of the encounter alive. Safety includes such considerations as where are the kids? If I shoot, will I hit one of them in the next room? Don't be trigger happy and shoot up the whole place. Discipline and discretion are the best rules here. Never shoot unless there is no other alternative. And if you do shoot, don't fire more rounds than you have to, doing your best to make each one count. Remember to replace the safety after the threat has subsided, whatever the outcome. This last point is another seemingly small consideration but could result in serious wounding or death to the unsuspecting and already uptight survivor.

Use available cover and concealment whenever possible. Keeping to the home defense scenario, a chair, couch or bed all provide a decent barrier to fire around. Try to fire around corners of a wall, keeping low and presenting the smallest target to the adversary.

As I said at the beginning, I hoped to give you the raw materials and some basic ideas to work from to produce a competent female shooter who could defend herself if she had to. Many of these points can be expanded and customized to your particular pupil, but the end result should be the same. Your finished product should be a survivor. ●

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Three Kershaw Kai Cutlery knives are, clockwise from left, 1060SS Black Horse Survival Kit, 1034TF Sheath Hunter and the 1050 Folding Field.

Three knives for outdoors/survival uses . . .

Staff Report

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Kershaw Knives Kai Cutlery USA, Ltd.
(Continued on page 73)



The 1034TF Sheath Hunter has a 5-inch drop point blade and Task Force rubber handle with finger grooves. It comes with a Cordura/Hard Shell sheath.

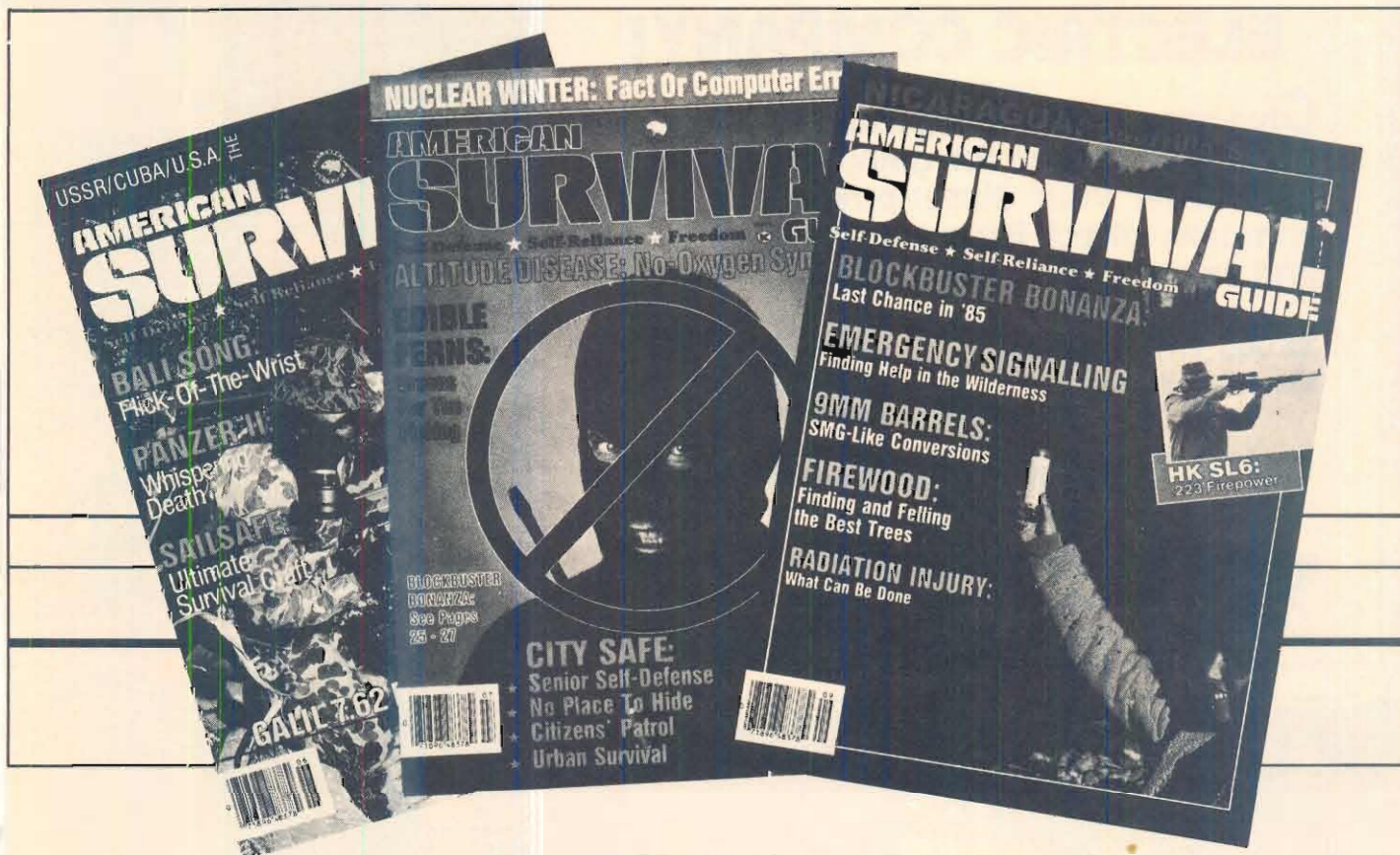


The 1050 Folding Field model measures 4 3/4 inches closed with a 3 3/4-inch locking drop point blade. It comes with harness leather scabbard.



Black Horse Survival Kit, 1060SS, includes a locking clip blade 4 inches long with Task Force rubber grips, Cordura belt pouch and assorted survival gear.

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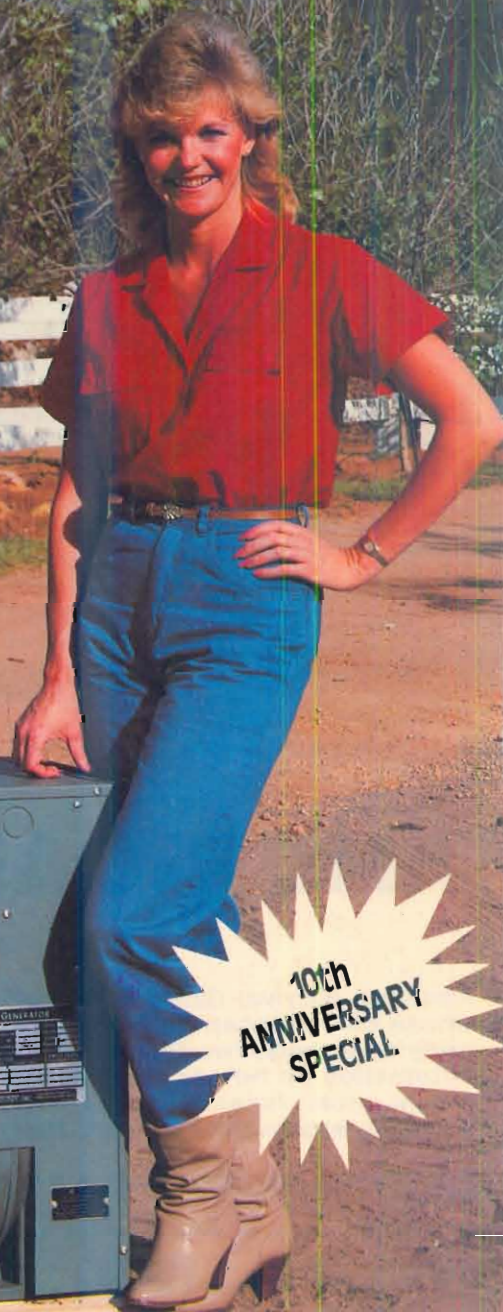


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